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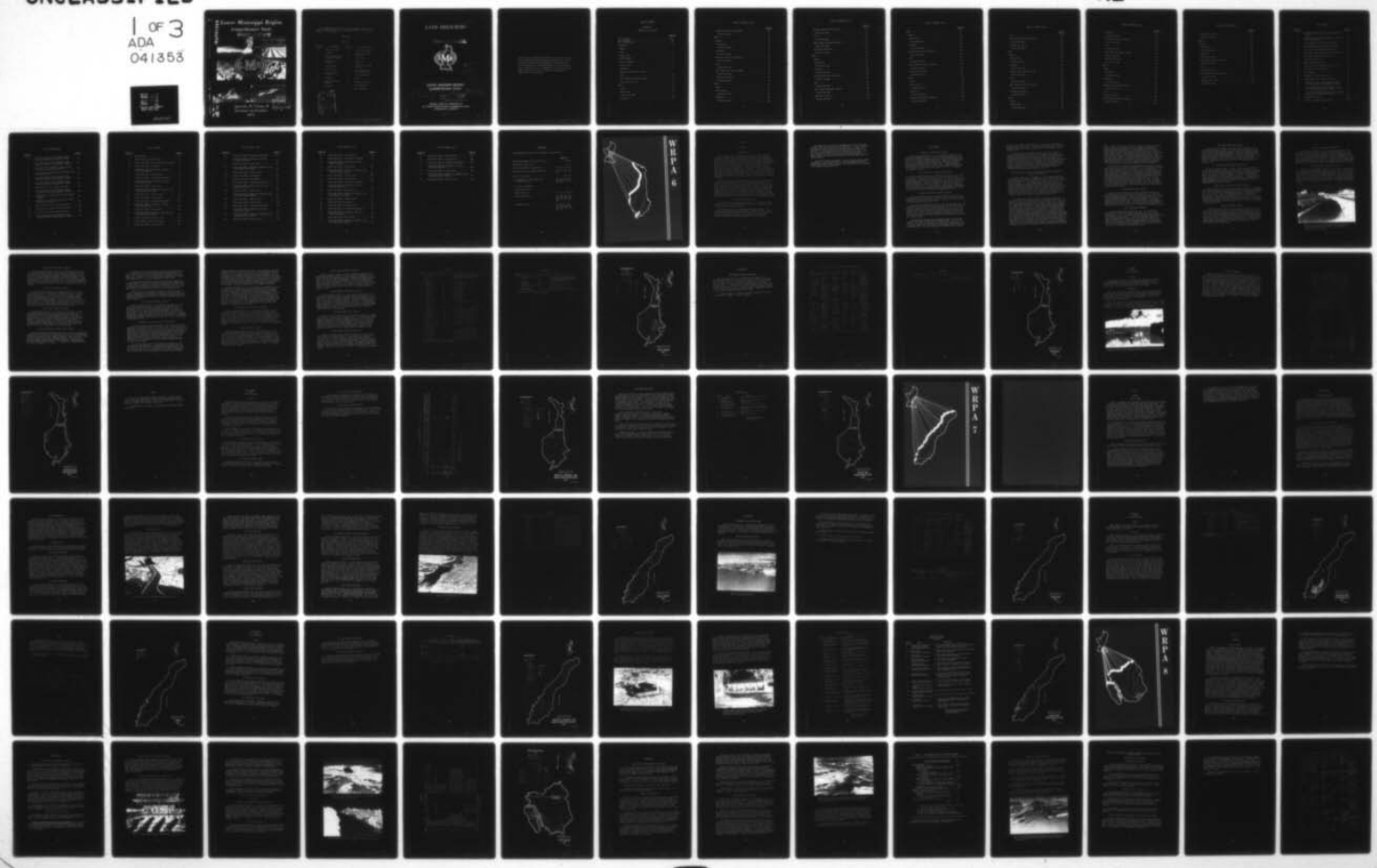

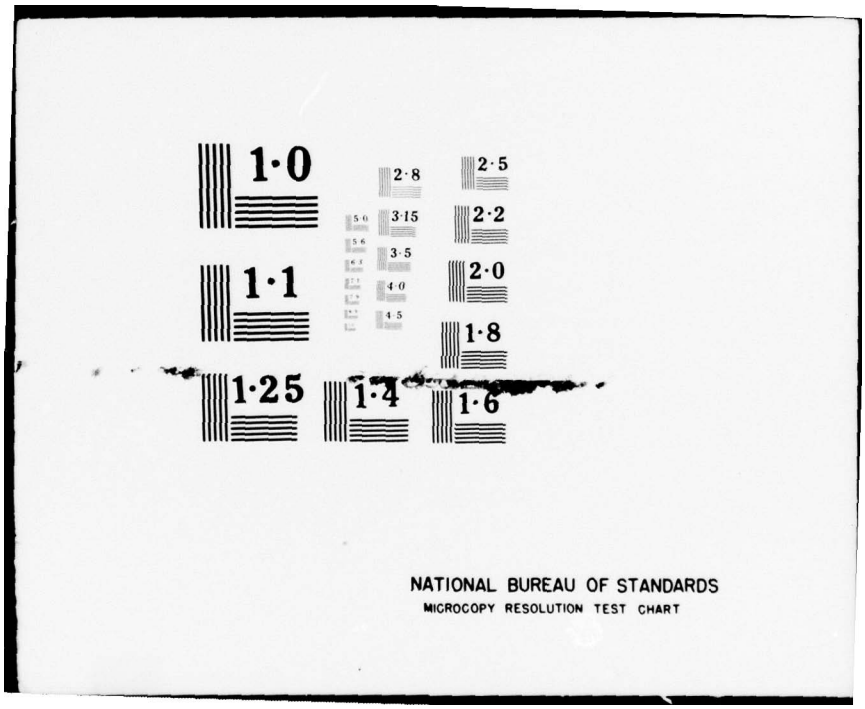
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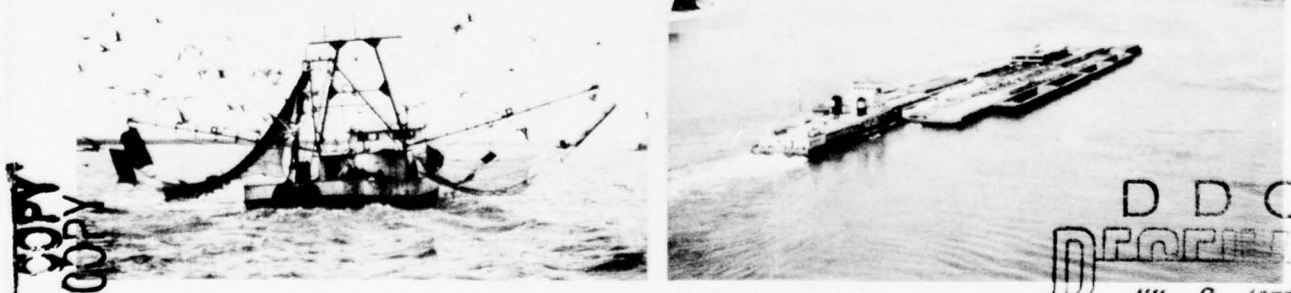
VOL. II

Lower Mississippi Region Comprehensive Study



Appendix D, Volume II
Inventory of Facilities
1974

Lower Mississippi Region Comprehensive Study

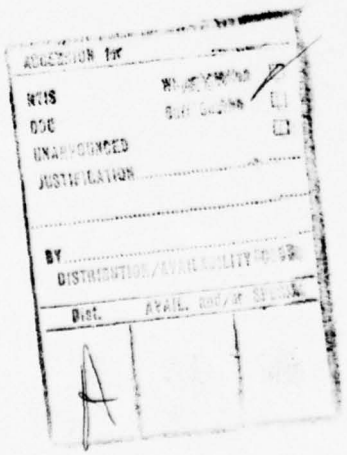
APPENDIX D INVENTORY OF FACILITIES

This appendix is one of a series of 22 documents comprising the complete Lower Mississippi Region Comprehensive Study. A list of the documents is shown below.

Main Report

Appendixes

Appendix	Description	Appendix	Description
A	History of Study	K	M and I Water Supply
B	Economics	L	Water Quality and Pollution
C	Regional Climatology, Hydrology & Geology	M	Health Aspects
D	Inventory of Facilities	N	Recreation
E	Flood Problems	O	Coastal and Estuarine Resources
F	Land Resources	P	Archeological and Historical Resources
G	Related Mineral Resources	Q	Fish and Wildlife
H	Irrigation	R	Power
I	Agricultural Land Drainage	S	Sediment and Erosion
J	Navigation	T	Plan Formulation
		U	The Environment



LAND RESOURCES

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LOWER MISSISSIPPI REGION COMPREHENSIVE STUDY.

Appendix D. Volume II. Land Resources. Inventory of Facilities.

PREPARED UNDER THE SUPERVISION OF
THE LOWER MISSISSIPPI REGION COMPREHENSIVE STUDY
COORDINATING COMMITTEE

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This report was prepared at field level by the Lower Mississippi Region Comprehensive Study Coordinating Committee and is subject to review by interested Federal agencies at the departmental level, by Governors of the affected States, and by the Water Resources Council prior to its transmittal to the President of the United States for his review and ultimate transmittal to the Congress for its consideration.

TABLE OF CONTENTS

APPENDIX D

INVENTORY OF FACILITIES

TABLE OF CONTENTS (Cont.)

TABLE OF CONTENTS (Cont.)

TABLE OF CONTENTS (Cont.)

TABLE OF CONTENTS (Cont.)

TABLE OF CONTENTS (Cont.)

TABLE OF CONTENTS (Cont.)

LIST OF TABLES

LIST OF TABLES (Cont.)

LIST OF FIGURES

LIST OF FIGURES (Cont.)

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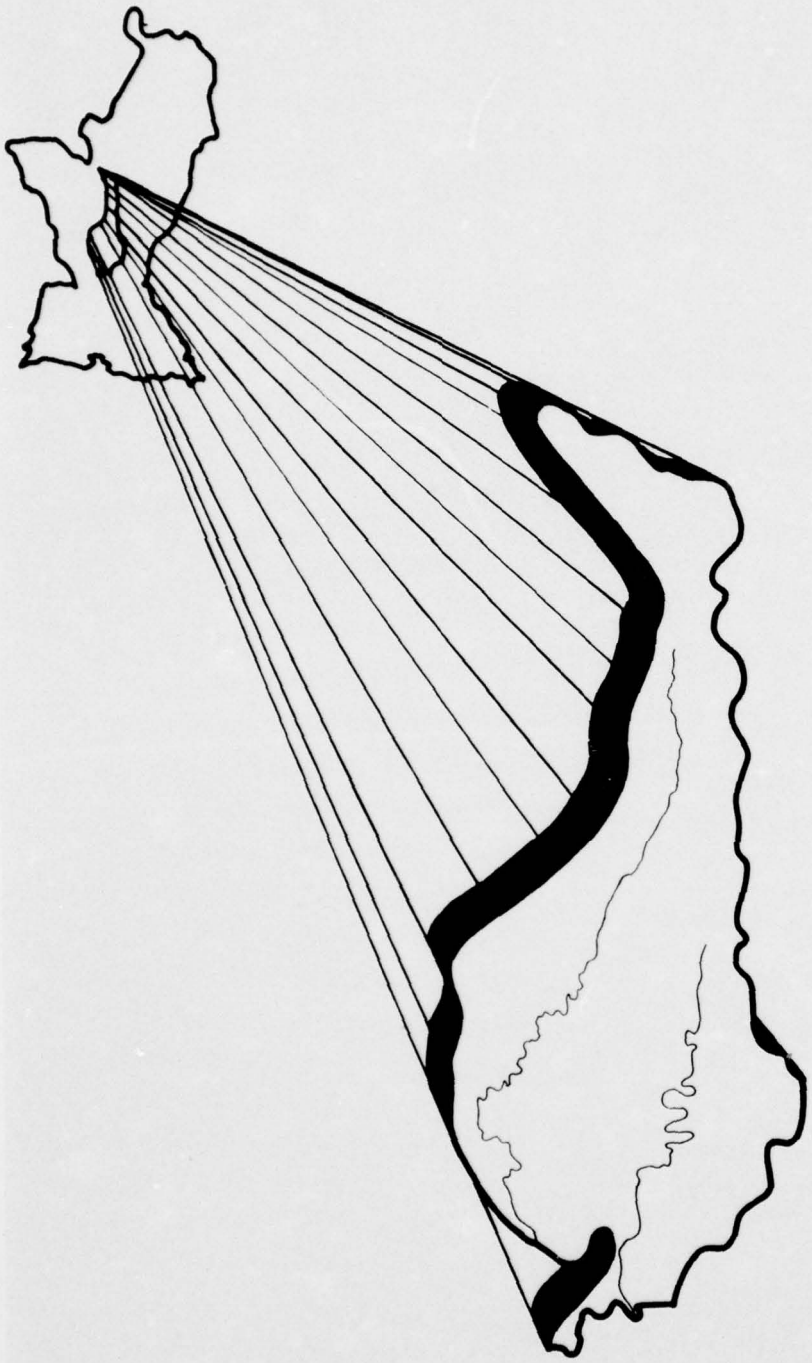
PHOTOGRAPHS

The photographs included in this appendix were furnished by:



WRPA 6

W R P A 6

GENERAL

Area of Study

WRPA 6 consists of the drainage basins of the Boeuf and Tensas Rivers and occupies land in Arkansas and Louisiana. The total area covered is 5,520 square miles or 5 percent of the region's total area. The study area is bordered to the east by the west bank Mississippi River levee, to the south and west by the divide of the Ouachita River Basin, and to the north by the right bank of the Arkansas River. Principal tributaries of the Boeuf and Tensas Rivers are Bayous Macon and Lafourche and Big and Colewa Creeks. The terrain of WRPA 6 is fairly flat with low natural terraces along stream beds. The most prominent physiographic feature is Macon Ridge, a strip of rolling land traversing the central portion of the WRPA from Eudora, Arkansas, to Sicily Island, Louisiana. Bastrop Ridge is located in the western part of the WRPA and extends from north of Bastrop, Louisiana, to the vicinity of Monroe, Louisiana.

The largest towns in the WRPA are Dumas and Eudora in Arkansas and Tallulah and Lake Providence in Louisiana. The WRPA population was 188,395 in 1970, which is a five percent decrease since 1959. Of this total population, 39 percent was urban, and 61 percent was rural. The highly fertile soil is the WRPA's most valuable resource. Agricultural purposes use 62 percent of the land area. The principal products are cotton, rice, corn, soybeans, small grains, beef, and timber. Other important sources of income in the WRPA are the wood products industry and the petroleum industry--particularly in the Louisiana portion. Most industries in the area process wood, petroleum, and agricultural products.

Hydrologic Characteristics

The average run-off originating in WRPA 6, 15.7 inches per year, or 6,400 c.f.s., is collected by the drainage basins of two principal streams, the Boeuf and Tensas Rivers.

The Boeuf River rises in southeastern Arkansas and flows in a southwesterly direction 230 miles to meet the Ouachita River. Stream gradients within the Boeuf River Basin vary from 1.0 foot per mile in the upper reaches to just over 0.2 foot per mile near its mouth. Average stream widths in the basin range from 50 to 300 feet.

The Tensas River originates in northeastern Louisiana and flows southerly about 165 miles to join the Black River. At this confluence just above the town of Jonesville, the Ouachita River becomes the Black River. Stream gradients in the Tensas Basin vary from 0.7 foot per mile in upper reaches to 0.2 foot per mile near the mouth. The lower 60 miles of the main channel are relatively deep and wide. Channel depths vary from 40 to 60 feet while top bank widths vary from 300 to 600 feet.

Except for channel improvements, there has been relatively little development of the streams in WRPA 6. An interconnecting system of bayous and drainage ditches throughout the area produces an interchange of flow under varying conditions.

FLOOD CONTROL

Arkansas City Watershed, Arkansas

Located in Desha County, Ark., this 16,143-acre Public Law 566 project was authorized in 1961. The main project features are: (1) 12,032 acres of land treatment measures costing an estimated $304,880, and (2) 22.9 miles of channel improvement. The total estimated project costs are $484,891 ($137,076 Federal and $347,815 non-Federal). Flood plain lands benefited are 13,823 acres. Estimated average annual damages prevented are $30,015 and total estimated annual benefits are $62,931. The benefit-cost ratio is 3.9 to 1. The project was completed in 1963.

Ark-La Watershed, Arkansas and Louisiana

Located in Chicot County, Ark. and East Carroll Parish, La., this Public Law 566 project was authorized in 1964 and covers an area of 22,975 acres. The main project features are: (1) 10,370 acres of land treatment measures costing an estimated $272,146, and (2) 30.8 miles of channel improvement. The total estimated project costs are $698,777 ($324,231 Federal and $374,546 non-Federal). Flood plain lands benefited are 19,536 acres. Estimated average annual damages prevented are $51,754 and total estimated annual benefits are $124,562. The benefit-cost ratio is 4.4 to 1. The project was completed in 1968.

Arkansas River Levees (Lower), Arkansas

Levee construction along the north and south banks of the lower Arkansas River was authorized by the Flood Control Act of May 15, 1928 as amended by Flood Control Acts of June 22, 1936 and July 24, 1946 and the Flood Control Act of October 1965.

The south bank Arkansas River levee begins at Pine Bluff, Ark., and extends 85.4 miles along the south bank to join the west bank levee of the Mississippi River 12 miles above Arkansas City, Ark. It was completed in 1933 and 1934 when the existing levee was extended to high ground in the vicinity of George Street in Pine Bluff. With the west bank main stem levee, it forms a continuous line of defense for the Tensas Basin to the south. Berms have been constructed along the levee to control seepage.

Construction of Harding Drain floodgate through the south bank levee at Pine Bluff was completed in September 1967. Seventy-five percent of the cost for this project was paid from Arkansas River and Tributaries funds and 25 percent was paid from Mississippi River and Tributaries funds. For a description of the Harding Drain floodgate

and other improvements at Pine Bluff, see subsection, "Pine Bluff, Arkansas, Local Protection." Total cost of the south bank system will be about $16,800,000 of which $15,646,000 has been expended through June 30, 1971.

The north bank levee extends from about three miles north of Sherill to the vicinity of Gillett. This project has enlarged, realigned, and extended levees originally constructed by local interests and provides protection for the Bayou Meto area of Arkansas from flooding of the Arkansas River and backwater from the Mississippi River. Of the 61.5 miles of levee in this project, 56.2 miles have been completed to full grade and section. Construction of the remaining 5.3 miles of the lower terminus near Gillette has been deferred. Total estimated Federal cost of the project is $10,400,000 of which $7,049,000 has been expended through June 30, 1971.

Boeuf and Tensas Rivers and Bayou Macon Channel Improvement, Arkansas and Louisiana

The Flood Control Act of December 22, 1944 (Senate Document 151, 78th Congress, 2d Session), as amended by the Acts of July 24, 1946 (Senate Document 191, 79th Congress, 2d Session); May 17, 1950; July 3, 1962; and October 27, 1965 (House Document 308, 88th Congress, 2d Session) provides for channel improvement for flood control and to afford adequate outlet drainage for the tributary lands on the major streams of the Boeuf and Tensas Basins in Arkansas and Louisiana. The Flood Control Act of August 13, 1968 (Public Law 90/483) (House Document 168, 90th Congress, 1st Session) authorized construction of a 6,500 cubic feet per second (c.f.s.) pumping plant and related works to divert flood flows presently entering Lake Chicot, Ark.

The Tensas Basin is that part of the alluvial valley of the Mississippi River in southeast Arkansas and northeast Louisiana lying south of the Arkansas River, west of the Mississippi River, east of Bayou Bartholomew and Ouachita River to the vicinity of Harrisonburg, La., thence east of the hills of Harrisonburg, and beyond Catahoula Lake to Red River, and north from the head of the Atchafalaya Basin Floodway and the south bank levee of Red River. The length of the basin is approximately 230 miles and varies in width from about 10 miles in the upper reach to about 80 miles at the latitude of Monroe, La. The basin is protected from Mississippi and Arkansas Rivers' headwater floods by the south bank Arkansas River levee and the connecting west bank main line Mississippi River levee from the high ground at Pine Bluff, Ark. to Old River, La. The Boeuf and Tensas Rivers' area comprises the upper portion of the Tensas Basin. Interior drainage within the area is carried through a complex system of interconnected waterways which empty into the Ouachita River through Boeuf and Tensas

Rivers. Large portions of the area are subject to inundation by headwater flooding. The project consists of channel modification by clearing, snagging, enlargement, and realignment of some 888 miles of stream channel within this area, and the Lake Chicot, Ark. pumping plant. Major streams in this project include Boeuf River, Tensas River, Bayou Macon, Big and Colewa Creeks, Bayou LaFourche, Canal 19, and several smaller streams. The pumping plant will divert the runoff from 350 square miles north of the lake to the Mississippi River, thereby reducing the turbidity and the water level fluctuation in Lake Chicot with the objective of restoring its damaged recreation and esthetic values and providing flood control, drainage, and other benefits.

Some 721 miles of channel improvement have been completed, consisting of 265.2 miles in Arkansas and 455.8 miles in Louisiana. The total cost of the completed work, as of June 30, 1971, is $26,078,000. The rapid change in land use since the initiation of the improvements in this area and the development of on-farm drainage systems, including lateral drainage, have emphasized the inadequacy of drainage and flood protection along the major outlets. Further enlargement of 293 miles of channel originally improved has been authorized. This work has been initiated on Tensas River and Big and Colewa Creeks. Planning is underway for the Lake Chicot pumping plant. The total estimated cost of the Boeuf and Tensas feature is $91,200,000. Through June 30, 1971, the completed portions of the work have prevented flood damages amounting to $17,637,000.

Camp Bayou Watershed, Arkansas

Located in Ashley County, Ark., this 21,756-acre project was authorized in 1958. The main project features are: (1) 7,544 acres of land treatment measures costing an estimated $110,445, and (2) 28.3 miles of channel improvement. The total estimated project costs are $254,520 ($108,621 Federal and $145,899 non-Federal). Flood plain lands benefited are 6,854 acres. Estimated average annual damages prevented are $65,569 and estimated total annual benefits are $133,164. The benefit-cost ratio is 10.1 to 1. The project was completed in 1963.

Canal 18 Watershed, Arkansas

Located in Desha and Drew Counties, Ark., this 38,850-acre, Public Law 566 project was authorized in 1964. The main project features are: (1) 15,460 acres of land treatment measures costing an estimated $222,600, and (2) 41.4 miles of channel improvement. The total estimated project costs are $701,789 ($317,955 Federal and $383,834 non-Federal). Flood plain lands benefited are 35 thousand acres. Estimated average annual damages prevented are $68,066 and estimated total annual benefits are $178,109. The benefit-cost ratio is 5.1 to 1. The project was completed in 1966.

Caney Bayou Watershed, Arkansas

Located in Chicot County, Ark., this 42,000-acre Public Law 566 project was authorized in 1966. The main project features are: (1) 17,200 acres of land treatment measures costing an estimated $668,800, and (2) 47 miles of channel improvement. The total estimated project costs are $1,375,306 ($499,076 Federal and $876,230 non-Federal). Flood plain lands benefited are 38,434 acres. Estimated average annual damages prevented are $41,313 and estimated total annual benefits are $72,090. The benefit-cost ratio is 1.5 to 1. The project was completed in 1970.

Central Madison Watershed, Louisiana

Located in Madison Parish, La., this 97,200-acre Public Law 566 project was authorized in 1969. The main project features are: (1) 41,520 acres of land treatment measures costing an estimated $1,461,555, and (2) 84 miles of channel improvement. The total estimated project costs are $2,238,955 ($648,720 Federal and $1,590,235 non-Federal). Flood plain lands to be benefited are 89,530 acres. Estimated average annual damages that will be prevented are $80,730 and estimated total annual benefits are $224,110. The benefit-cost ratio is 4.7 to 1. Construction has not been started.

Chicot, Desha, and Drew Watershed, Arkansas

Located in Chicot, Desha, and Drew Counties, Ark., this 41,227-acre Public Law 566 project was authorized in 1962. The main project features are: (1) 24,257 acres of land treatment measures costing an estimated $641,210 and (2) 45.8 miles of channel improvement. The total estimated project costs are $1,047,807 ($281,873 Federal and $765,934 non-Federal). Flood plain lands benefited are 22,330 acres. Estimated average annual damages prevented are $87,540 and estimated total annual benefits are $197,010. The benefit-cost ratio is 5.5 to 1. The project was completed in 1965.

Chicot Watershed, Arkansas

Located in Chicot County, Ark., this 144,496-acre Public Law 566 project was authorized in 1969. The main project features are: (1) 61,200 acres of land treatment measures costing an estimated $2,263,471, and (2) 163 miles of channel improvements. The total estimated project costs are $4,290,279 ($1,509,584 Federal and $2,780,695 non-Federal). Flood plain lands to be benefited are 100,363 acres. Estimated average annual damages that will be prevented are $196,311 and estimated total annual benefits are $486,485. The benefit-cost ratio is 3.5 to 1. Construction has not been started.

Crooked Bayou Watershed, Arkansas

Located in Chicot County, Ark., this 31,499-acre Public Law 566 project was authorized in 1962. The main project features are: (1) 17,798 acres of land treatment measures costing an estimated $473,410, and (2) 46 miles of channel improvement. The total estimated project costs are $1,333,650 ($560,445 Federal and $773,205 non-Federal). Flood plain lands benefited are 12,405 acres. Estimated average annual damages prevented are $70,165 and estimated total annual benefits are $140,335. The benefit-cost ratio is 2.2 to 1. The project was completed in 1968.

Fleschman's Bayou Watershed, Arkansas

Located in Ashley and Chicot Counties, Ark., this 26,998-acre Public Law 566 project was authorized in 1966. The main project features are: (1) 13 thousand acres of land treatment measures costing an estimated $258,694, and (2) 33 miles of channel improvement. The total estimated project costs are $741,824 ($347,364 Federal and $394,460 non-Federal). Flood plain lands benefited are 22,258 acres. Estimated average annual damages prevented are $47,566 and estimated total annual benefits are $64,372. The benefit-cost ratio is 2.0 to 1. The project was completed in 1969.

Channel dug with Soil Conservation Service assistance. Note kudzu on banks to keep down willow growth and protect bank from erosion.

Garrett Bridge Watershed, Arkansas

Located in Lincoln County, Ark., this 11,920-acre Public Law 566 project was authorized in 1965. The main project features are: (1) 10,660 acres of land treatment measures costing an estimated $242,090, and (2) 26 miles of channel improvement. The total estimated project costs are $738,896 ($333,786 Federal and $405,110 non-Federal). Flood plain lands to be benefited are 10,340 acres. Estimated average annual damages that will be prevented are $30,127 and total annual benefits are $77,226. The benefit-cost ratio is 2.1 to 1. Construction has not been started.

Grady-Gould Watershed, Arkansas

Located in Desha, Jefferson, and Lincoln Counties, Ark., this 48,832-acre Public Law 566 project was authorized in 1961. The main project features are: (1) 25,700 acres of land treatment measures costing an estimated $745,392, and (2) 88 miles of channel improvement. The total estimated project costs are $1,701,886 ($658,194 Federal and $1,043,692 non-Federal). Flood plain lands to be benefited are 31,233 acres. Estimated average annual damages prevented are $80,386 and estimated total annual benefits are $172,873. The benefit-cost ratio is 2.2 to 1. The project was completed in 1965.

Kelso-Rohwer Watershed, Arkansas

Located in Desha County, Ark., this 26,895-acre Public Law 566 project was authorized in 1962. The main project features are: (1) 15 thousand acres of land treatment measures costing an estimated $353,200, and (2) 36.3 miles of channel improvement. The total estimated project costs are $858,670 ($354,732 Federal and $503,938 non-Federal). Flood plain lands to be benefited are 13,875 acres. Estimated average annual damages that will be prevented are $66,165 and estimated total annual benefits are $132,330. The benefit-cost ratio is 3.3 to 1. Construction has not been started.

Louisiana Department of Public Works Projects

This section includes drainage systems authorized to be planned and constructed by the Department of Public Works on its own or in cooperation with Federal, state, and local agencies engaged in such activities. Local agencies include police juries, drainage districts, levee districts, and other legally constituted districts or agencies. Federal agencies are the Soil Conservation Service, U. S. Department of Agriculture, and the Corps of Engineers, U. S. Army.

The projects are local undertakings with Federal and State assistance. Division of costs in parish-wide systems constructed in the period 1942 to about 1960 was 60 percent of cost contributed by local agency and 40 percent of cost plus engineering, planning, and construction supervision by the Louisiana Department of Public Works.

Principal improvement works consisted of parish-wide planning of drainage systems to provide land drainage and protection against floods to agricultural, residential, business, and industrial areas and sites. Improvements also included major drainage streams which serve as an outlet for two or more drainage districts or parish drainage systems.

Principal works of improvement consisted of excavation of new channels, enlargement and clearing and snagging of existing canals and streams, replacement of or alteration of inadequate drainage structures at crossings, construction of low water crossings and appurtenant water control structures.

North Tensas Watershed, Louisiana

Located in Tensas Parish, La., this 186,072-acre Public Law 566 project was authorized in 1960. The main project features are: (1) 33 thousand acres of land treatment measures costing an estimated $1,959,284, and (2) 102 miles of channel improvement. The total estimated project costs are $2,482,724 ($460,539 Federal and $2,022,185 non-Federal). Flood plain lands benefited are 170,430 acres. Estimated average annual damages prevented are $109,100 and estimated total annual benefits are $218,210. The benefit-cost ratio is 5.0 to 1. The project was completed in 1965.

Pine Bluff, Arkansas, Local Protection Works

Levee construction along the south bank of the Arkansas River was authorized by the Flood Control Act of May 15, 1928. This levee system, which affords protection to the city of Pine Bluff against Arkansas River flooding, was completed in 1933 and 1934 when the then existing south bank Arkansas River levee was extended to high ground in the vicinity of George Street. Concurrently with this construction, the city of Pine Bluff constructed the outlet canal extending from the then existing Harding Lake to Ambeau Bayou, and thence to Bayou Bartholomew. In addition, the city constructed a 60-inch-diameter floodgate through the Arkansas River levee.

The River and Harbor Act of 1946 authorized improvement of the Arkansas River for navigation. Construction of navigation locks on the Arkansas River provides a navigation pool at elevation 196.0 feet mean sea level (m.s.l.), in the vicinity of Pine Bluff. Maintenance of this pool level required replacement of the old 60-inch-diameter

floodgate through the Arkansas River levee. The replacement structure, completed in 1967, consists of 2.8 feet by 8 feet gated openings with a landside weir to prevent Arkansas River backwater damages. Seventy-five percent of the Federal cost will be paid by authority of the River and Harbor Act of 1946 and the remaining 25 percent paid from Mississippi River and Tributaries funds. The total cost will be about $16,500,800, of which $16,306,000 has been expended through June 30, 1971. Remaining work includes a railroad relocation and minor channel improvements. Flood damages prevented through June 30, 1971 amount to $433,000.

The River and Harbor Act of 1950 authorized a comprehensive plan of improvement for the Ouachita River and tributaries, which included additional flood control improvements in the vicinity of Pine Bluff. The plan of improvement for Pine Bluff included enlargement of the outlet canal and construction of the Intercepting Canal extending from 17th Street to Bayou Bartholomew. Also, as a part of local interests' assurances, a dam in Harding Drain at Hazel Street was included in the project plan to divert all flows originating in the Harding Drain area down the Intercepting Canal thus reducing the amount of improvement required in Harding Drain. The Federal portion of the project was completed in 1958 at a cost of $221,133.

Randolph-Walnut Lake Watershed, Arkansas

Located in Desha County, Ark., this 13,564-acre Public Law 566 project was authorized in 1959. The main project features are (1) 8,378 acres of land treatment measures costing an estimated $175,393, and (2) 24.1 miles of channel improvement. The total estimated project costs are $300,503 ($92,650 Federal and $207,853 non-Federal). Flood plain lands benefited are 10,270 acres. Estimated average annual damages prevented are $78,430 and estimated total annual benefits are $81,057. The benefit-cost ratio is 5.5 to 1. The project was completed in 1962.

Redfork Watershed, Arkansas

Located in Desha County, Ark., this 23,266-acre Public Law 566 project was authorized in 1964. The main project features are: (1) 11,478 acres of land treatment measures costing an estimated $185,072, and (2) 38 miles of channel improvement. The total estimated project costs are $642,222 ($327,332 Federal and $314,890 non-Federal). Flood plain lands to be benefited are 23,266 acres. Estimated average annual damages that will be prevented are $54,455 and estimated total annual benefits are $125,577. The benefit-cost ratio is 4.1 to 1. Construction has not been started.

South Tensas Watershed, Louisiana

Located in Tensas Parish, La., this 160,000-acre Public Law 566 project was authorized in 1965. The main project features are: (1) 82,600 acres of land treatment measures costing an estimated $2,052,244, and (2) 91 miles of channel improvement. The total estimated project costs are $2,804,502 ($520,200 Federal and $2,284,302 non-Federal). Flood plain lands benefited are 77,000 acres. Estimated average annual damages prevented are $29,780 and estimated total annual benefits are $74,220. The benefit-cost ratio is 2.0 to 1. The project was completed in 1969.

Walnut-Roundaway Watershed, Louisiana

Located in Madison Parish, La., this 227,700-acre Public Law 566 project was authorized in 1969. The main project features are: (1) 68,750 acres of land treatment measures costing an estimated $2,780,250, and (2) 280 miles of channel improvement. The total estimated project costs are $8,528,260 ($3,066,987 Federal and $5,461,273 non-Federal). Flood plain lands to be benefited are 222,700 acres. Estimated average annual damages that will be prevented are $290,880 and estimated total annual benefits are $756,340. The benefit-cost ratio is 2.6 to 1. Construction has not been started.

Wells Bayou Watershed, Arkansas

Located in Desha County, Ark., this 14,800-acre project was authorized in 1964. The main project features are: (1) 8,500 acres of land treatment measures costing an estimated $121,964, and (2) 24 miles of channel improvement. The total estimated project costs are $453,667 ($249,420 Federal and $204,247 non-Federal). Flood plain lands benefited are 14,590 acres. Estimated average annual damages prevented are $39,137 and estimated total annual benefits are $91,846. The benefit-cost ratio is 4.3 to 1. The project was completed in 1967.

West Madison Watershed, Louisiana

Located in Madison and East Carroll Parishes, La., this 22,900-acre project was authorized in 1967. The main project features are: (1) 10,950 acres of land treatment measures costing an estimated $649,580, and (2) 23 miles of channel improvement. The total estimated project costs are $872,928 ($186,033 Federal and $686,895 non-Federal). Flood plain lands benefited are 19,730 acres. Estimated average annual damages prevented are $18,270 and estimated total annual benefits are $58,240. The benefit-cost ratio is 4.4 to 1. The project was completed in 1970.

PROJECT MAP INDEX
Flood Control - WRPA 6

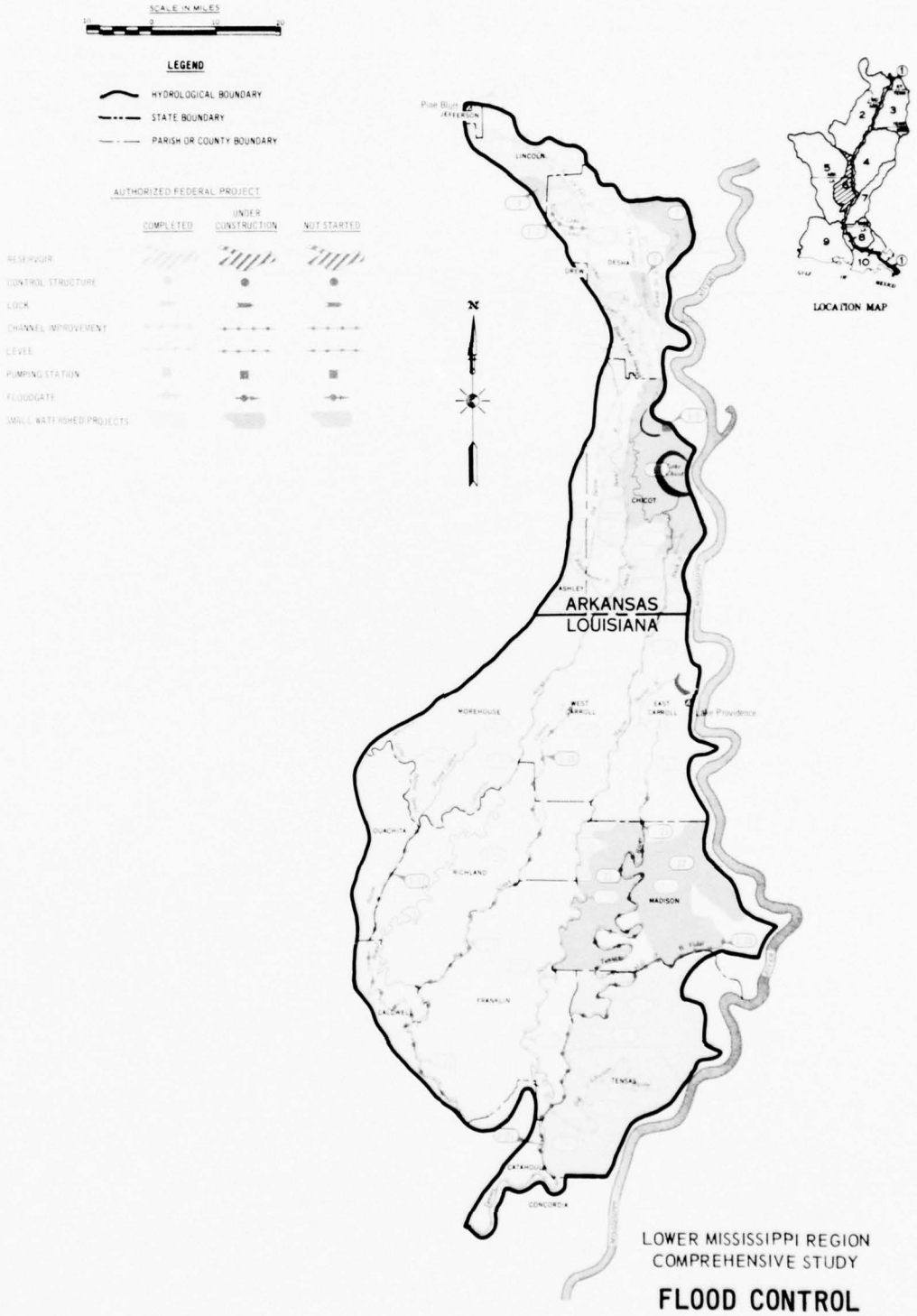
Map Location No.	Name of Project	Agency	Year Complete	Project Uses	Description 1/
11.	Ark. City Watershed, Ark.	SCS	1963	FC	Proj. area, 16,143 ac. 22.9 mi. chan. imp. Cost $484,891. (L)
18.	Ark-La Watershed, Ark. & La.	SCS	1968	FC	Proj. area, 22,975 ac. 30.8 mi. chan. imp. Cost $698,877. (L)
8.	Ark. River Lower Levees, Ark.	C of E, VXD	68% Complete		85.4 mi. along south bank for Pine Bluff to Miss. R. west bank levee. Floodgate, Harding Drain at Pine Bluff, North bank levee 61.5 mi. long, 56.2 mi. to grade & sec. Total est. Fed. cost $10,400,000.
1.	Boeuf & Tensas Rivers & Bayou Macon Chan. Imp., Ark. & La.	C of E, VXD			
1-16.	Baxter Bayou Chan. Imp.		1964		11.7 mi. Cost $46,782.
1-17.	Bayou LaFourche Chan. Imp.			FC	44.6 mi. complete. 44.2 authorized. Cost $12,920,000.
1-18.	Bayou Macon Chan. Imp.		1962	FC	146.4 mi. Cost $10,380,000.
1- 9.	Big Bayou Chan. Imp.		1957	FC	33.3 mi. Cost $1,060,000.
1-20.	Big Choctaw Bayou Chan. Imp.		1965	FC	35.1 mi. Cost $298,800.
1-15.	Big and Colewa Creeks Chan. Imp.		1962	FC	75.5 mi. 75.3 mi. authorized. Cost $10,550,000.
1- 7.	Black Pond Slough Chan. Imp.		1963	FC	14.3 mi. Cost $380,000.
1-14.	Boeuf River Chan. Imp.		1962	FC	103.9 mi. Cost $8,590,000.
1- 6.	Canal 18 Chan. Imp.		1964	FC	10.3 mi. Cost $265,000.
1- 2.	Canal 19 Chan. Imp.		1962	FC	50.2 mi. Cost $1,720,000.
1- 1.	Canal 19 Ext. Chan. Imp.		1966	FC	9.4 mi. Cost $95,000.
1- 4.	Canal 43 Chan. Imp.		1960	FC	34.5 mi. Cost $2,420,000.
1- 5.	Canal 81 Chan. Imp.		1960	FC	32.7 mi. Cost $1,700,000.
1-12.	Caney Bayou Chan. Imp.		1965	FC	7.1 mi. Cost $215,000.
1-10.	Fleschman's Bayou Chan. Imp.		1964	FC	6.6 mi. Cost $131,400.
1- 3.	Kirsch Lake Canal Chan. Imp.		Not started	FC	9.3 mi. Cost $380,000.
1- 8.	Lake Chicot		Not started		6,500 c.f.s. pumping plant, recreation areas. Cost $24,100,000.
1-13.	Little Bayou Boeuf Chan. Imp.		1965		7.4 mi. Cost $74,436.
1-19.	Mill Bayou & Bayou Vidal Chan. Imp.		Not started		16.4 mi. Cost $565,000.
1-11.	Rush Bayou Chan. Imp.		1965	FC	6.7 mi. Cost $39,500.
1-21.	Tensas River Chan. Imp.		1962	FC	96.5 mi. Cost $5,070,000 (1965). 160.0 mi. authorized. Cost $18,250,000.
16.	Camp Bayou Watershed, Ark.	SCS	1963	FC	Proj. area, 21,756 ac. 28.3 mi. chan. imp. Cost $254,520. (L)
10.	Canal 18 Watershed, Ark.	SCS	1966	FC	Proj. area, 38,850 ac. 41.4 mi. chan. imp. Cost $701,789. (L)
17.	Caney Bayou Watershed, Ark.	SCS	1970	FC	Proj. area, 42,000 ac. 47 mi. chan. imp. Cost $1,375,306. (L)
21.	Central Madison Watershed, La.	SCS	Not started	FC	Proj. area, 97,200 ac. 84 mi. chan. imp. (L)
12.	Chicot, Desha, & Drew Watershed, Ark.	SCS	1965	FC	Proj. area, 41,227 ac. 45.8 mi. chan. imp. Cost $1,047,807. (L)
13.	Chicot Watershed, Ark.	SCS	Not started	FC	Proj. area, 144,496 ac. 163 mi. chan. imp. (L)
14.	Crooked Bayou Watershed, Ark.	SCS	1968	FC	Proj. area, 31,499 ac. 46 mi. chan. imp. Cost $1,333,650. (L)
15.	Fleschman's Bayou Watershed, Ark.	SCS	1969	FC	Proj. area, 26,998 ac. 33 mi. chan. imp. Cost $741,824. (L)
4.	Garrett Bridge Watershed, Ark.	SCS	Not started	FC	Proj. area, 11,920 ac. 26 mi. chan. imp. (L)
3.	Grady-Gould Watershed, Ark.	SCS	1965	FC	Proj. area, 48,832 ac. 88 mi. chan. imp. Cost $1,701,886. (L)
9.	Kelso-Rohwer Watershed, Ark.	SCS	Not started	FC	Proj. area, 26,895 ac. 36.3 mi. chan. imp. (L)
25.	Louisiana Department of Public Works Projects		1971	FC	
25-3.	East Carroll Parish Drainage				Proj. area, 275,840 ac. 111 mi. chan. imp. Cost $401,818.
25-6.	Franklin Parish Drainage				Proj. area, 411,500 ac. 367 mi. chan. imp. Cost $1,055,158.
25-5.	Madison Parish Drainage				Proj. area, 423,680 ac. 121 mi. chan. imp. Cost $747,457. (9 contracts)
25-1.	Morehouse Parish Drainage				Proj. area, 512,600 ac. 273 mi. chan. imp. Cost $1,094,367.
25-4.	Richland Parish Drainage				Proj. area, 368,900 ac. 363 mi. chan. imp. Cost $1,012,625.
25-7.	Tensas Parish Drainage				Proj. area, 398,700 ac. 308 mi. chan. imp. Cost $769,964.

1/ Degree of protection indicated as follows: Low (L) 1 to 10 yr. frequency.
Medium(M) 10 to 50 yr. frequency.
High (H) 50 to 100 yr. frequency.

PROJECT MAP INDEX
Flood Control - WRPA 6 (continued)

Map Location No.	Name of Project	Agency	Year Complete	Project Uses	Description 1/
23.	North Tensas Watershed, La.	SCS	1965	FC	Proj. area, 186,072 ac. 102 mi. chan. imp. Cost $2,482,724. (L)
2.	Pine Bluff, Ark., Local Protection Works	C of E, MD	1934, 1958, & 1967	FC	Ext. of exist. Ark. R. levee, 60"-diam. floodgate & outlet canal fm Harding Drain to Ambeau Bayou to Bayou Bartholomew. Floodgate replaced in 1967. Tot. Fed. cost $16,500,800. RR reloc. & minor chan. imp. not complete. Addnl. imp. of outlet canal & constr. of ditch fm 17th St. to Bayou Bartholomew completed in 1958, cost $391,722.
5.	Randolph-Walnut Lake Watershed, Ark.	SCS	1962	FC	Proj. area, 15,564 ac. 24.1 mi. chan. imp. Cost $300,503. (L)
7.	Redfork Watershed, Ark.	SCS	Not started	FC	Proj. area, 23,266 ac. 38 mi. chan. imp. (L)
24.	S. Tensas Watershed, La.	SCS	1969	FC	Proj. area, 160,000 ac. 91 mi. chan. imp. Cost $2,804,502. (L)
22.	Walnut Roundaway Watershed, La.	SCS	Not started	FC	Proj. area, 227,700 ac. 280 mi. chan. imp. (L)
6.	Wells Bayou Watershed, Ark.	SCS	1967	FC	Proj. area, 14,800 ac. 24 mi. chan. imp. Cost $453,667. (L)
19.	West Madison Watershed, La.	SCS	1970	FC	Proj. area, 22,900 ac. 23 mi. chan. imp. Cost $872,928. (L)

1/ Degree of protection indicated as follows: Low (L) 1 to 10 yr. frequency.
Medium (M) 10 to 50 yr. frequency.
High (H) 50 to 100 yr. frequency.



LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

FLOOD CONTROL

WRPA 6

FIGURE 31

NAVIGATION

Lake Providence Harbor, Louisiana

Lake Providence Harbor was constructed for a Federal cost of $198,859 under authority of Section 107, River and Harbor Act of 1960. It is the only major port in WRPA 6. The harbor is .7 mile long, 150 feet wide and 9 feet deep, except 800 feet adjacent to the public terminal where it is 400 feet wide, forming a turning basin. The public terminal operates off of about 5 acres of the 248-acre industrial park. It has a large warehouse and one shoreside crane. Approximately 446,782 tons were moved through the harbor area in 1970.

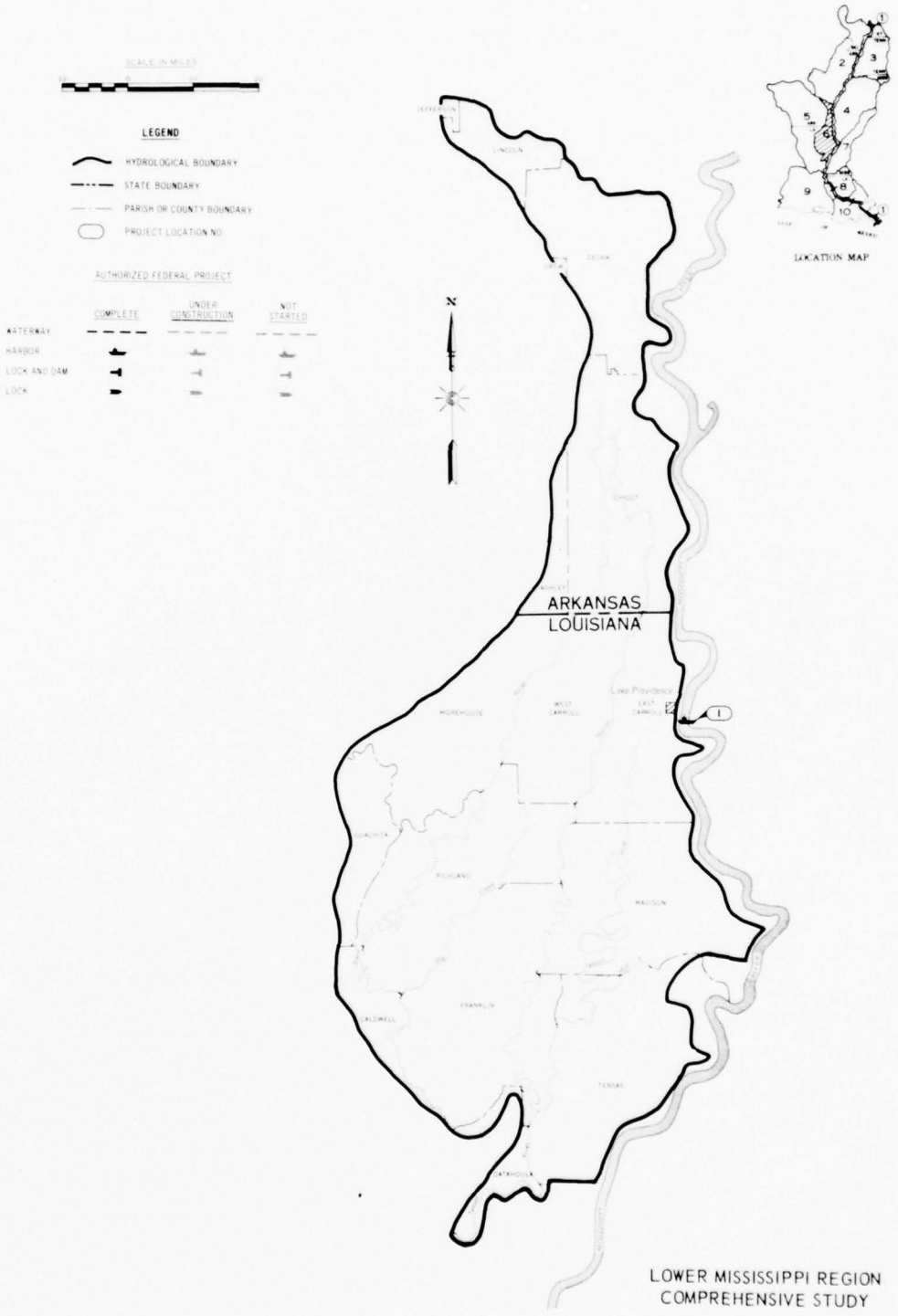
A brief description of terminal facilities along the Mississippi River adjacent to WRPA 6 is shown on Table 24.

Table 24 - List of Mississippi River Terminals, Docks, Mooring Locations, and Warehouses in WRPA 6

AHP Mile	Location	Owner or Operator	Type of Service	Shelter or Warehousing	Cargo Handling Equipment	Remarks
570R	Cypress Bend, Ark.	Desoto Terminal Co.	Grain loading	Grain storage	Elevator & conveyor	No RR connections. Landing, mooring dolphins
554R	Ark. City, Ark.	Texas Eastern Transmission Co.	Barge loading of bulk petroleum products	None	Pumps	No RR connections. Landing, mooring dolphins
552R	Yellow Bend, Ark.	Cargill, Inc.	Grain	None	Conveyor	No RR connections. Landing, spar barge
531R	Below Greenville Bridge, Miss.	Riverside Soybean Co.	Grain loading	Grain storage tanks	Elevator & conveyor	No RR connections. Mooring dolphins
530R		General Facilities, Inc. (Cities Service)	Liquified petroleum bulk products	Storage tanks	Incline ramp & pumps	No RR connections
513R	Grand Lake, Eudora, Ark.	Standard Oil Co. of Louisiana	Bulk petroleum products	Storage tanks	Pumps & floating barge	No RR connections
510R	Eudora, Ark.	Pioneer Food, Inc.	Grain loading	Grain storage tanks	Elevator & conveyor	No RR connections
483R	Lake Providence Harbor, La.	Lake Providence Sand & Gravel Co.	Sand & gravel	None	Dragline on floating barge	No RR connections. Ramp, landing barge
483R		Lake Providence Port Elevator	Grain loading	Grain storage	Conveyor & elevator	No RR connections. Mooring dolphins
483R		City of Lake Providence	Freight loading & unloading	None	None	No RR connections. Mooring facilities & ramp
468R	Goodrich Landing, La.	Goodrich Landing Elevator Co.	Grain loading	Grain storage tank	Conveyor & elevator	No RR connections. Mooring dolphins
468R		Louisiana Delta Farmers Co-Op	Grain loading	Grain storage tank	Conveyor	No RR connections. Mooring dolphins & ofc.
457R	Omega Landing, La.	Omega Grain Export Elevator	Grain loading	Grain storage	Conveyor & elevator	No RR connections. Mooring dolphins
438R	Delta, La.	Girod Gravel Co.	Sand & gravel	None	Crane on barge	No RR connections. Ramp
438R		US Army Engr Dist, Vicksburg	Revetment casting & loading	None	None	No RR connections. Ramp, dock
396R	Gladstone Landing, La.	Tensas Port Elevator Co.	Grain	Grain storage	Elevator & conveyor	No RR connections. Mooring dolphins
394R	St. Joseph, La.	La. Dept. of Hwys.	Miss. River ferry	None	Twin screw diesel boat & ferry barge	No RR connections
373R	Gibson Landing, La.	Ashland Oil Co.	Bulk petroleum products	Petroleum storage tanks	Pumps	No RR connections Spar barge
364R	Vidalia, La.	Vidalia Dock & Storage Co.	Barge service	None	None	No RR connections
363R		US Army Engr Dist, Vicksburg	Revetment casting & loading	None	None	No RR connections. Ramp and dock
362R	Vidalia, La.	Missouri Pacific Railroad Co.	Transfer railroad cars to barges	None	None	Miss. Central RR. Tracks to river

PROJECT MAP INDEX
Navigation and Harbors-MRPA 6

Map Location No.	Name of Project	Agency	Year Complete	Project Uses	Description
1.	Lake Providence Harbor, La.	C of E, VXD	1963	N	9 ft. x 150 ft. x .7 mi. w/800 ft. x 400 ft. turning basin. Serves 248 ac. ind. area. 446,782 tns. in 1970. Fed. cost $198,859.



LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

NAVIGATION

WRPA 6

FIGURE 32

RECREATION
AND
FISH AND WILDLIFE

General

Human population density is somewhat below average for the Lower Mississippi Region; land and water resources presently have below average values for fish and wildlife. WRPA 6 is essentially 100 percent alluvial valley and used primarily for agriculture.

Recreation

WRPA 6 has 23,545 acres of land available for outdoor recreation, including 359 acres State owned lands, 16,610 acres of county and quasi-public lands, 258 acres municipal, local government and school board lands, and 6,315 acres of lands in private ownership. There are no Federally owned lands in WRPA 6.

WRPA 6 has 32,262 acres of slack water and about 536 miles of stream suitable for recreation. Developed recreation facilities include 37 acres for camping, 83 acres for picnicking, 183 acres for playing outdoor sports and games, 71 acres for swimming, and 37 acres for boat ramps.

Louisiana's parks offer excellent opportunity for outdoor recreation.

Fish and Wildlife

WRPA 6 water-related fish and wildlife resources include 40,000 acres of lakes between two and 40 acres in size, 32,000 acres of lakes over 40 acres in size, 536 miles of fishable streams, 831,000 acres of forest land, and 85,000 acres of wetland. Ponds under two acres in size are found in moderate numbers, but as yet have not been inventoried. Included in the lake acreage figures are 10 major Mississippi River oxbow lakes. Three of these lakes lie riverward of the Mississippi River levee, or in WRPA 1. WRPA 6 water-related fish and wildlife facilities include State ownership of three wildlife management areas, one refuge, two parks, and one fish hatchery. Numerous private hunting and fishing clubs exist, but have not been inventoried. All areas are capable of supplying wildlife-oriented recreation consisting of nature photography and nature study, particularly bird watching. Such use is nonconsumptive within certain limits.

PROJECT MAP INDEX
Recreation, Fish, and Wildlife Facilities - WRPA 6

Map Location No.	Name of Project	Agency	Project Use	Description 1/
10.	Albemarle Lake		F&W	High F&W rating. 749 ac. Miss. R.oxbow. High fish.& waterfowl use.
14.	Caldwell Wildlife Mgmt. Area	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 12,123 ac. Good waterfowl hunting area. No fishing.
7.	Cities Svc. Wildlife Mgmt. Area	La. Wild Life & Fisheries Comm.	F&W	Moderate F&W rating. 16,400 ac. No waterfowl hunting or fishing.
6.	Coulee State Wildlife Refuge	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 12,110 ac. Waterfowl refuge.
11.	Eagle Lake		R, F&W	High F&W rating. 4,275 ac. Miss. R. oxbow. Nationally known for fish. High waterfowl use.
4.	Cassoway Lake		R, F&W	High F&W rating. 800 ac. Miss. R. oxbow. Good fish. & waterfowl use.
3.	Grand Lake		R, F&W	High F&W rating. 1,400 ac. Miss. R. oxbow. Good fish.&waterfowl use.
15.	Lake Bruin		R, F&W	High F&W rating. 2,342 ac. Miss. R. oxbow.Good fish.& waterfowl use.
16.	Lake Bruin State Park	La. State Parks & Rec. Comm.	R, F&W	45 ac. High WOR & fish. use. Rec.facs. incl. camping, picnicking, boating, swimming & nature trails.
1.	Lake Chicot		R, F&W	High F&W rating. 5,300 ac. Miss. R. oxbow. High fish.& waterfowl use.
2.	Lake Chicot State Park	Ark. State Parks, Rec. & Travel Comm.	R, F&W	6,400 ac. Extremely high fish. & WOR usage. Rec.facs. incl. camping, (cabins, tent-trailer), picnicking, swimming, boating & nature trails.
19.	Lake Concordia		R, F&W	High F&W rating. 1,050 ac. Miss. R. oxbow. High fish.& waterfowl use.
5.	Lake Providence		R, F&W	High F&W rating. 1,230 ac. Miss.R. oxbow. High fish.& waterfowl use.
18.	Lake St. John		R, F&W	High F&W rating. 2,118 ac.Miss.R. oxbow. High fish.& waterfowl use.
13.	Lake St. Joseph		R, F&W	High F&W rating. 1,197 ac.Miss.R. oxbow. High fish.& waterfowl use.
8.	Monroe State Fish Hatchery	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 12 ac. State warm water fish hatchery.
17.	Rodney Lake		R, F&W	High F&W rating. 666 ac.Miss.R. oxbow. High fish.& some waterfowl use.
9.	Russell Sage Wildlife Mgmt. Area	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 14,600 ac. High fishing & waterfowl use.
20.	Turkey Creek Lake	La. Dept. Public Works	R	Constr. in 1953. 3,100 ac. Adm. by Turkey Creek Game & Fish Comm.
12.	Yucatan Lake		R, F&W	High F&W rating. 1,997 ac. Miss.R. oxbow. High fish.& waterfowl use.

1/ WOR = Wildlife oriented recreation
F&W = Fish and wildlife
F&W* = Supplies only nonconsumptive fish and wildlife oriented recreation

LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

RECREATION AND FISH AND WILDLIFE

WRPA 6

FIGURE 33

POWER

There are no steam-electric plants in the area. Electric power needs are met to a high degree by transmission and distribution facilities of the Middle South System. There is minor generation by internal combustion engines and by industry in the area.

At present there are no plans for steam-electric generating plants in the area.

WATER SUPPLY
AND
SEWAGE TREATMENT

General

Water Resources Planning Area 6 covers all or part of 17 counties and parishes in Arkansas and Louisiana. Because data herein is available only on a county-wide basis, hydrologic boundaries have been adjusted to conform to county lines. Ten counties and parishes fall within these boundaries and are considered in municipal, industrial, and agricultural water use and sewage treatment data collection. These counties and parishes have been further subdivided into three subareas.

In 1970, within WRPA 6, 226 MGD was required to meet the municipal, industrial, and agricultural water withdrawal requirements. Of this, 68.4 percent was supplied by groundwater sources. Groundwater withdrawals accounted for 92.6 percent of the municipal water used, 46.2 percent of the industrial water used, and 75.9 percent of the agricultural water used.

Sewage treatment was provided in 42 percent of the communities and serviced 70.5 percent of the population which utilized the area's municipal water distribution systems in 1970. The remaining 29.5 percent of the municipally serviced population utilized septic tanks or their sewage was disposed untreated.

1970 Municiapl Water Supply

In 1970, municipal water systems within the WRPA serviced 43 communities, which had a combined population of 105,003 people, and varied in size from 33 people at Lake Bruin, La., to almost 15,000 people in Bastrop, La. The average daily municipal water withdrawal within the WRPA was 8.1 MGD. During July, the peak municipal water use month in 1970, the average daily use was 9.2 MGD. This water was supplied 92.6 percent from groundwater sources. The average daily withdrawals resulted in a 76 GPCD use in areas serviced by central water systems. This compares with a national average of 166 GPCD.

1970 Industrial Water Supply

Industrial activity within WRPA 6 during 1970 required a daily average water withdrawal of 61.5 MGD. Groundwater supplied 46.2 percent of this withdrawal and surface sources supplied 53.8 percent.

1970 Agricultural Water Supply

In addition to the municipal and industrial water withdrawals, agricultural withdrawals required 152.7 MGD for use in the irrigation of 77,261 acres and 3.7 MGD for use in the raising of livestock and poultry in 1970. Of the water used, 76 and 70 percent were supplied from groundwater sources, respectively.

1970 Sewage Treatment Facilities

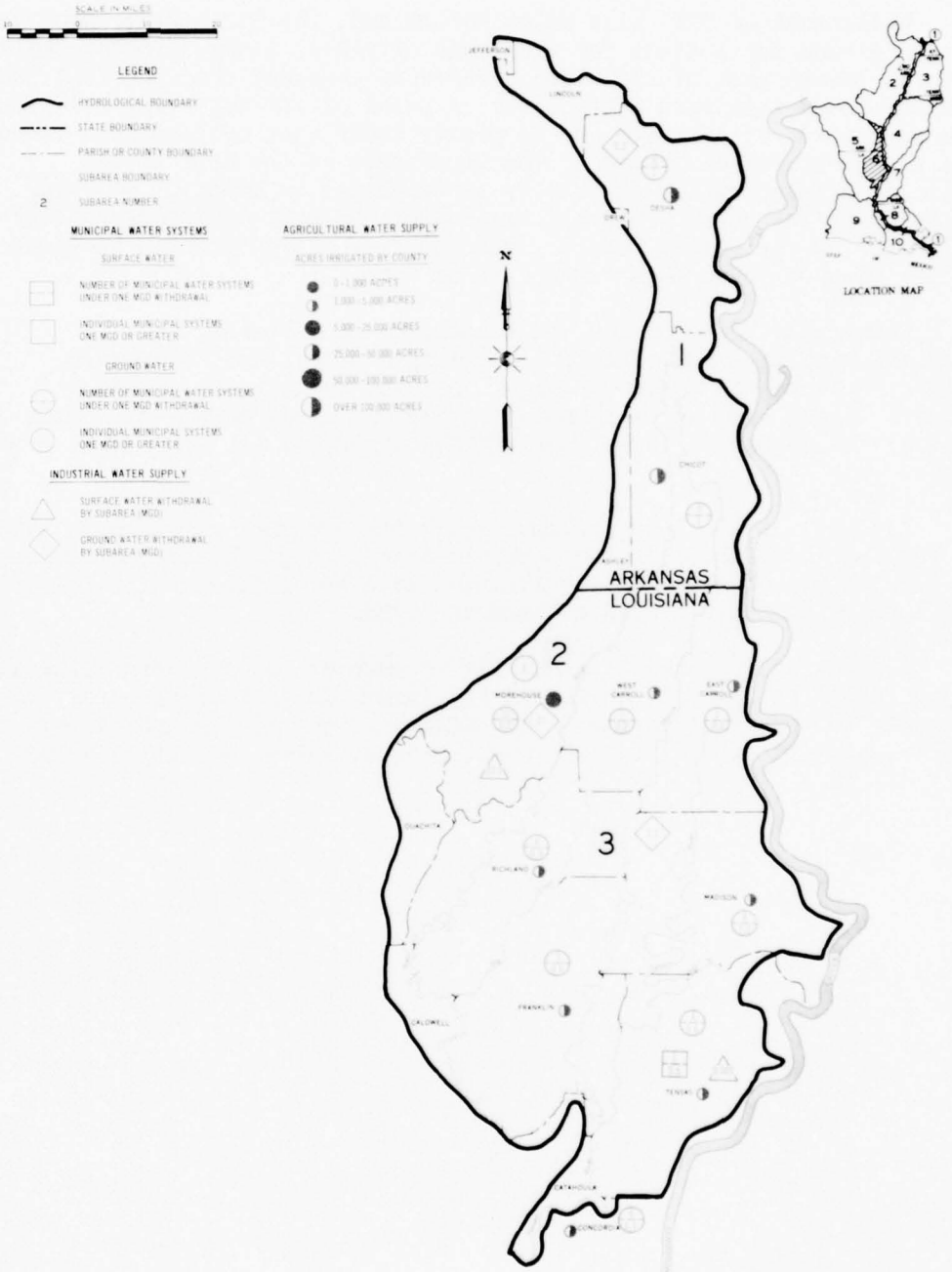
Primary and secondary treatment was provided in 17 of the communities that utilized a municipal water distribution system in 1970. These treatment facilities provided service for 74,074 people. There was, however, one community with population over 1,000 that did not provide any centralized sewage treatment.

PROJECT MAP INDEX
Municipal, Industrial, and Agricultural Water Supply and Sewage Treatment Facilities - WRPA 6

Subarea County	Population	Municipal Water Use 1/ No. systems	Withdrawal (MGD) Ground	Surface	Total	Industrial Water Use 1/ Withdrawal (MGD) Ground	Surface	Total	Agricultural Water Use 1/ Withdrawal (MGD) Ground	Surface	Total	Sewage Treatment Facilities: Secondary Treatment Number Plants	Population Serviced	Primary Treatment Number Plants	Population Serviced	No Treatment 2/ Number Communities	Population
6-1						0.3	0.0	0.3	30.2	9.5	39.7						
Desha	10,634	6	1.0		1.0							2	9,283				
Chicot	10,797	3	1.0		1.0							3	11,247				
6-2						27.0	33.1	60.1	12.6	3.9	16.5						
Morehouse	25,510	11	1.2		1.2							1	14,713				
6-3						1.1		1.1	75.9	24.3	100.2						
Concordia	12,750	4	1.1		1.1							3	11,853				
East Carroll	6,800	1	.3		.3												
Franklin	8,200	3	.6		.6											1	6,183
Madison	11,616	4	.6		.6							2	6,688				
Richland	9,396	4	.9		.9							1	9,643				
Tensas	5,855	4	.6	.6	1.2							1	3,962				
West Carroll	3,445	3	.2		.2							3	4,705	1	1,980		
Total	105,003	43	7.5	.6	8.1	28.4	33.1	61.5	118.7	37.7	156.4	16	72,094	1	1,980	1	6,183

1/ All figures are daily averages.

2/ Only denotes communities of 1,000 or greater population.



LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

MUNICIPAL, INDUSTRIAL, AND AGRICULTURAL WATER SUPPLY

WRPA 6

FIGURE 34

ARCHEOLOGY AND HISTORY

While most of WRPA 6 is delta bottomland, the Macon Ridge provided a high ground for Indians for thousands of years, along with the small natural levees east of the Ridge. There is abundant evidence that the Indians found this area attractive. A total of 200 archeological sites are on record, 73 of which are so poorly known that cultural and temporal placement cannot be made. The importance of the area in the cultural development of the valley is evidenced by location of what is known as the Poverty Point site, one of the most important aboriginal sites in the United States. But there are large gaps in knowledge of the area on which much remains to be done.

Sites identified in this WRPA include: 1 historic, 51 Mississippian, 66 woodland, 9 archaic, 0 paleo, and 73 unknown. Figure 35 shows the number of sites occupied during each period by county. Since some of the sites have been occupied during more than one period, the number of sites shown on the figure do not agree with those above.

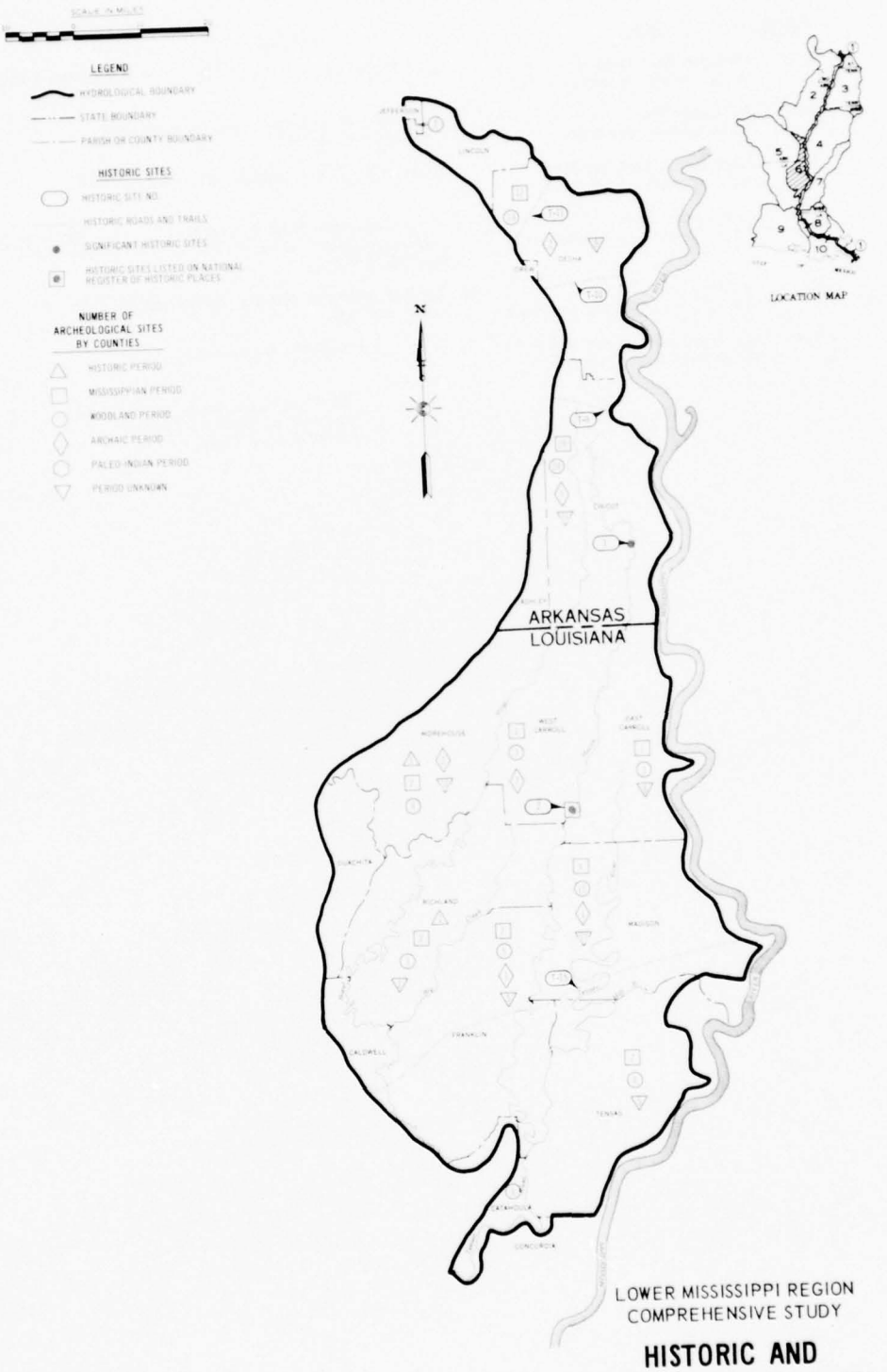
Like all areas in the valley, there are a number of historic sites of varying local interest, but few of national significance, as evidenced by figure 35. There was very limited Civil War action, and a few of the located historic trails crossed the area.

Aesthetically, WRPA 6 is similar to much of the southern alluvial plain, delta bottomland, quite heavily farmed in most of the area. Probably the greatest aesthetic attraction is the Mississippi River itself, and its subsidiary waterways, bayous, lakes, and tributaries.

PROJECT INDEX
Historic Sites - WRPA-6

Map No.	Name		Description
T-11	Arkansas Post Road Desha County, Arkansas		Also known as the "Grand Maris" or "Louisiana Trace."
T-10	Chihuahua Trail Desha County, Arkansas		A portion of the old Napoleon Road from Tennessee to Mexico.
1	Ditch Bayou Battleground Chicot County, Arkansas		Site of Civil War engagement, June 6, 1864.
T-9	Fort Towson Road Chicot County, Arkansas		First east-west road in the South. Also known as "Military Road," "Chicot Trace," "Washington Road," and "Mill Road."
2	Poverty Point West Carroll Parish, Louisiana	NR	Largest and most complex archeological site in North America.
T-15	St. Denis and LeSeur's Route Three Parishes, Louisiana		Route from Texas to Vicksburg.

(NR--This site is on the National Register of Historic Places)
(NP--National Park)

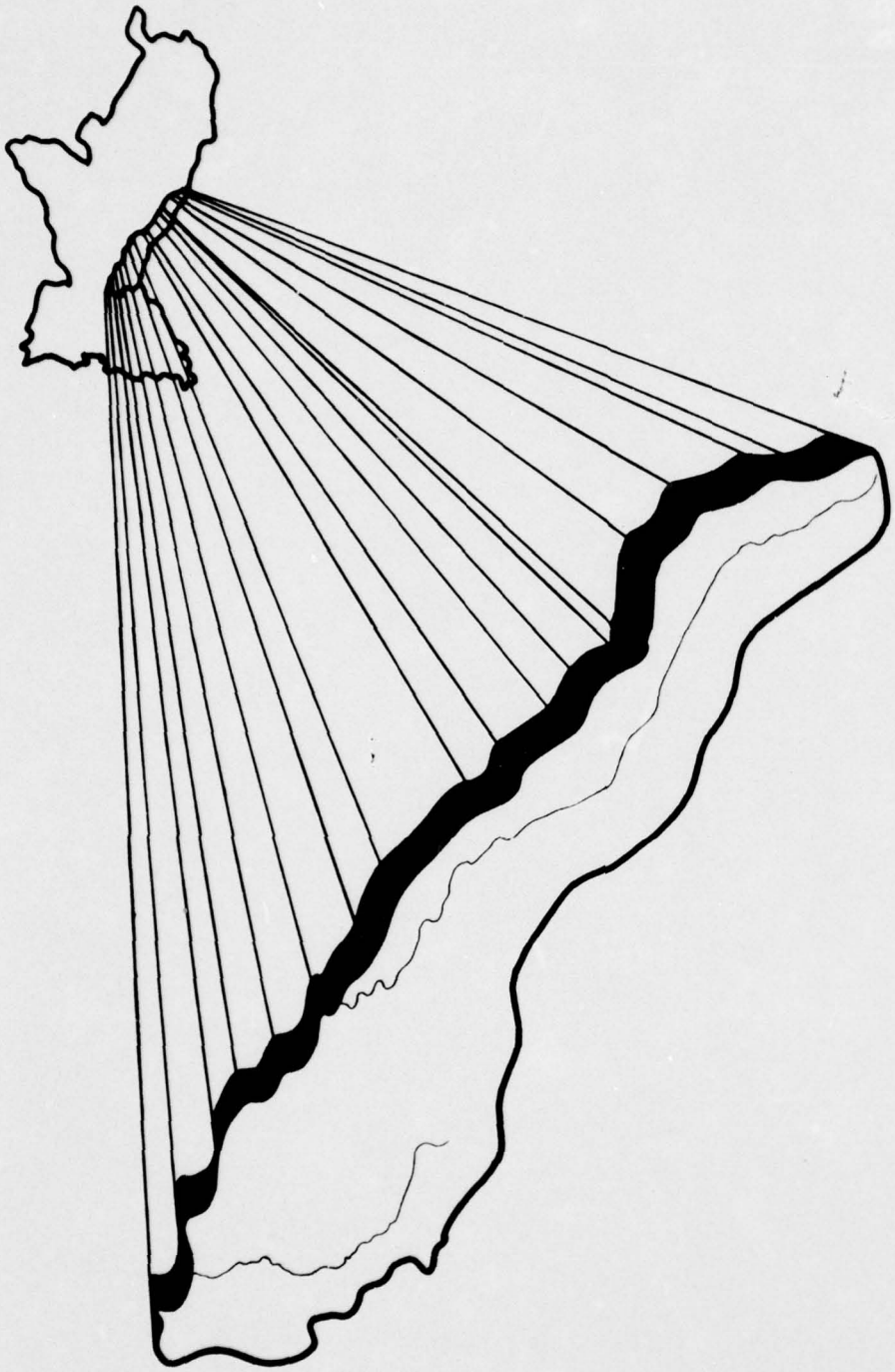


LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

HISTORIC AND ARCHEOLOGICAL SITES

WRPA 6

FIGURE 35



WRPA 7

W R P A 7

GENERAL

Area of Study

WRPA 7 is composed of the Big Black River Basin and basins of southeast Mississippi streams that drain into the Mississippi River. The 6,574 square miles covered by the study area account for almost seven percent of the total area in the Lower Mississippi Region. The terrain is mostly upland or hill land. The northern boundary of the WRPA is formed by the divide of the Yazoo River Basin. The divides of the Tombigbee and Pearl River Basins form the eastern boundary. The southern boundary is formed by the divides of the Amite River Basin and basins of other southerly flowing streams. The western boundary is the east top bank of the Mississippi River. Principal streams in the area are the Big Black, Homochitto, and Buffalo Rivers and Bayou Pierre.

The largest cities in the area are Natchez, Canton, Kosciusko, and Winona, Mississippi. In 1970, the WRPA population was 156,496, a 4.9 percent decrease since 1959. Of this total population, 29 percent was urban and 71 percent was rural. The WRPA has suffered as the result of decreasing demands for agricultural labor and from a slow industrial growth. Agriculture, always a major part of the economy of the area, used about 55 percent or 1,900,000 acres of land. Principal crops are cotton, corn, soybeans, small grains, pasture, and timber. Most industry in the area relates to agriculture, wood products, food processing, and petroleum products.

Hydrologic Characteristics

WRPA 7 averages about 16 inches of run-off per year or 7,740 c.f.s. Major streams in the area are the Big Black and Homochitto Rivers.

The largest stream in the area is the Big Black River, which handles almost 50 percent of the flows of the entire WRPA. Stream gradients of the Big Black Basin vary from 2.5 feet per mile in the upper tributaries to 1.0 foot per mile in the lower reaches of the main stream. The Big Black River rises in north-central Mississippi and flows southwesterly 270 miles to its confluence with the Mississippi River. The terrain and configuration of this long, narrow basin are such that no appreciable amount of the total drainage area is controlled by any single tributary. Tributaries of the Big Black are relatively short and originate in the hill areas, thus carrying a rapid run-off from their respective drainage areas.

The Homochitto River rises in Lincoln County, Mississippi, and flows southwesterly about 80 miles to join the Mississippi River. Stream gradients range from over nine feet per mile in the upper reaches to 3.6 feet per mile in lower reaches. Other major streams in the WRPA are the Buffalo River, St. Catherine Creek, Coles Creek, and Bayou Pierre. Characteristics of the streams are similar to those of streams in the Big Black and Homochitto River Basins. Typical stream gradients are those of the Buffalo River, nine to 10 feet per mile, and Bayou Pierre, four to seven feet per mile.

FLOOD CONTROL

Bentonia Watershed

Located in Yazoo County, Miss., this 24,404-acre Public Law 566 project was authorized in 1960. The main project features are: (1) 504 acres (304 acres openland and 200 acres woodland) of critical area stabilization measures and 11,862 acres of land treatment measures costing an estimated $432,173; (2) nine floodwater retarding dams costing an estimated $504,828; and (3) 17.7 miles of channel improvement costing an estimated $110,955. There is a 13.75 square mile drainage area above dams with a total storage of 4,427 acre-feet (953 acre-feet sediment, 3,474 acre-feet floodwater). The total estimated project costs are $1,047,956 ($595,645 Federal and $452,311 non-Federal). Floodplain lands benefited are $48,283; estimated average annual benefits are $50,473. The benefit-cost ratio is 1.8 to 1. The project was completed in 1971.

Big Black River and Tributaries

The Big Black River Basin comprises about 3,400 square miles of land in west-central Mississippi. In 1939, under authority of the Flood Control Act of 1936, over 300 miles of its length along the main channel were improved by excavating numerous cutoffs, and clearing and snagging in Webster, Choctaw, Montgomery, Carroll, Attala, Holmes, Yazoo, Madison, Hinds, Warren, and Claiborne Counties. The Federal cost of construction was $909,946. This work has lowered peak stages and permitted faster runoff of floodwaters. It has prevented flood damages in the amount of about $3,767,000 since it was completed. Channel clearing and snagging on 14 tributaries of the Big Black River in Attala, Carroll, Montgomery, Choctaw, and Webster Counties, was completed in 1941 under the authority of Section 2 of the Flood Control Act of 1937. Total Federal cost of this work was $110,000. Maintenance of this project has ceased and it no longer functions

In 1950-51, a contract was made with the Mississippi State Highway Department to construct bank protection on Big Black River at the site of the U. S. Highway 80 bridge which was threatened by bank caving. The cost to the Government was $48,000. This was a joint venture with the highway department and Federal Government. Expenditure of Federal funds was authorized by Section 14 of the Flood Control Act of 1946.

A comprehensive study for the overall development of the water resources of the Big Black River Basin was completed in Fiscal Year 1969. The report is being reviewed by the Water Resources Council.

Box Creek Watershed

Located in Holmes County, Miss., this 28,900-acre Public Law 566 project was authorized in 1969. The main project features are: (1) 683 acres (312 acres openland, 371 acres woodland) of critical area stabilization measures and 7,250 acres of land treatment measures costing an estimated $329,891; (2) one floodwater retarding dam; and (3) 22.5 miles of channel improvement. There are 11.19 square miles of drainage area above dams, with total storage of 4,382 acre-feet (1,088 acre-feet sediment, 3,294 acre-feet floodwater). The total estimated project costs are $939,934 ($624,640 Federal and $315,294 non-Federal). Floodplain lands to be benefited are 4,658 acres. Estimated average annual damages to be prevented are $47,552; total estimated annual benefits are $52,127. The benefit-cost ratio is 2.1 to 1. Construction has not been started.

Buffalo River

Channel improvement on Buffalo River was authorized by the Flood Control Act of June 22, 1936. The project has been deferred indefinitely because of lack of local interest and insufficient justification.

Ellison Creek Watershed

Authorized in 1958, this 19,150-acre Public Law 566 project is located in Yazoo County, Miss. The main project features are: (1) 1,896 acres (482 acres openland, 1,414 acres woodland) of critical area stabilization measures and 4,998 acres of land treatment measures costing an estimated $201,284; (2) three floodwater retarding dams; (3) one multipurpose dam for floodwater and irrigation; and (4) 19 miles of channel improvement. There are 4.29 square miles of drainage area above dams, with a total storage of 1,432 acre-feet (252 acre-feet sediment, 1,162 acre-feet floodwater, 18 acre-feet irrigation). The total estimated project costs are $612,573 ($427,768 Federal and $184,805 non-Federal). Floodplain lands benefited are 1,695 acres. Estimated average annual damages prevented are $38,048; estimated total annual benefits, $44,067. The benefit-cost ratio is 1.9 to 1. The project was completed in 1970.

Five Creeks Watershed

Located in Yazoo County, Miss., this 93,189-acre Public Law 566 project was authorized in 1969. The main project features are: (1) 1,500 acres (1,375 acres openland, 125 acres woodland) of critical area stabilization measures and 40,155 acres of land treatment measures costing an estimated $1,242,501; (2) seven floodwater retarding dams; and (3) 63.3 miles of channel improvement. There is a drainage area above dams of 46.36 square miles with a total storage of 19,108 acre-feet

(6,514 acre-feet sediment, 12,594 acre-feet floodwater), and surface area normal pools of 965 acres. The total estimated project costs are $3,451,847 ($2,067,704 Federal and $1,384,143 non-Federal). Floodplain lands to be benefited are 17,695 acres. Estimated average annual damages that will be prevented are $89,525; total estimated annual benefits are $135,025. The benefit-cost ratio is 1.6 to 1. Construction has not been started.

Homochitto River

The Homochitto River Basin comprises portions of Jefferson, Copiah, Lincoln, Franklin, Amite, Adams, and Wilkinson Counties in southwest Mississippi. The river flows into the Mississippi River through Armstrong Canal, Abernathy Channel, Mills Bayou, and Washout Bayou, about 22 miles south of Natchez, Miss. The completed flood control project on the Homochitto River consists of a number of cutoffs, aggregating approximately 5.8 miles in length, which reduce the length of the river from Rosetta, Miss., to its mouth from 37.7 miles to 30.6 miles; construction of small earth dams at points where the new cutoffs leave and reenter the existing channel; clearing and snagging operations along both banks from mile 1 to mile 35; and blasting along sides and bottom of the channel where its development is retarded by stumps or hard non-erodible clay strata.

Aerial view of typical floodwater retarding structure.

Authorization for the project was made by Flood Control Acts of 1936, 1938, and 1941. The latest improvements were completed in 1952. The cost of completed work was $205,000. It is estimated that flood damages prevented by these improvements total $194,000. In 1956, emergency bank protection works were constructed on Homochitto River near the Mississippi State Highway No. 33 bridge and the Illinois Central Railroad bridge. The Federal cost for the work was $48,917, under the authority of Section 14 of the Flood Control Act of 1946.

Long Creek Watershed

Authorized in 1965, this 40,306-acre Public Law 566 project is located in Attala County, Miss. The main project features are: (1) 551 acres (290 acres openland and 261 acres woodland) critical area stabilization measures and 15,807 acres of land treatment measures costing an estimated $475,970; (2) five floodwater retarding dams; (3) one multipurpose dam for floodwater and recreation; (4) 23.4 miles of channel improvement; and (5) recreation facilities. There is a drainage area behind dams of 14.94 square miles with total storage of 7,312 acre-feet (1,789 acre-feet sediment, 4,930 acre-feet floodwater, 602 acre-feet recreation). The total estimated project costs are $1,679,976 ($1,181,041 Federal and $498,935 non-Federal). Floodplain lands to be benefited are 6,041 acres. Estimated average annual damages that will be prevented are $91,834; total estimated annual benefits are $154,852. The benefit-cost ratio is 3.2 to 1. The project is approximately 50 percent complete.

Mulberry Creek Watershed

Located in Montgomery County, Miss., this 27,494-acre Public Law 566 project was authorized in 1960. The main project features are: (1) 1,307 acres (woodland) of critical area stabilization measures and 6,646 acres of land treatment measures costing an estimated $405,495; (2) nine floodwater retarding dams; and (3) 20 miles of channel improvement. There is a drainage area above dams of 16.19 square miles with total storage of 4,945 acre-feet (489 acre-feet sediment, 4,456 acre-feet floodwater), and a surface area of normal pools of 178 acres. The total estimated project costs are $1,015,532 ($610,714 Federal and $404,818 non-Federal). Floodplain lands to be benefited are 2,976 acres. Estimated average annual damages that will be prevented are $53,870; estimated total annual benefits are $56,575. The benefit-cost ratio is 2.0 to 1. The project is inactive.

Panther Creek Watershed

Located in Madison County, Miss., this 35,354-acre Public Law 566 project was authorized in 1970. The main project features are: (1) 130 acres (openland) of critical area stabilization measures and 19,231 acres of land treatment measures costing an estimated $631,702; (2)

five floodwater retarding dams; and (3) 19.6 miles of channel improvement. There is a drainage area above dams of 10.52 square miles with total storage of 4,920 acre-feet (1,659 acre-feet sediment, 3,261 acre-feet floodwater) and a surface area of normal pools of 323 acres. The total estimated project costs are $1,924,783 ($1,127,081 Federal and $797,702 non-Federal). Floodplain lands that will be benefited are 4,175 acres. Estimated average annual damages that will be prevented are $89,128; estimated total annual benefits are $98,987. The benefit-cost ratio is 2.0 to 1. Construction has not been started.

Persimmon and Burnt Corn Creek Watershed

Located in Madison County, Miss., this 33,018-acre Public Law 566 project was authorized in 1960. The main project features are: (1) 177 acres (woodland) of critical area stabilization measures and 9,200 acres of land treatment measures costing an estimated $359,145; (2) four floodwater retarding dams; and (3) 18.3 miles of channel improvement. There is a drainage area above dams of 9.04 square miles with total storage of 2,964 acre-feet (381 acre-feet sediment, 2,583 acre-feet floodwater) with surface area of normal pools of 132 acres. The total estimated project costs are $934,583 ($544,423 Federal and $390,160 non-Federal). Floodplain lands benefited are 2,561 acres. Estimated average annual benefits are $63,103. The benefit-cost ratio is 2.3 to 1. The project was completed in 1966.

Second Creek Watershed

Located in Adams County, Miss., this 69,056-acre Public Law 566 project was authorized in 1959. The main project features are: (1) 19,003 acres of land treatment measures costing an estimated $541,365; (2) ten floodwater retarding dams; and (3) 9.7 miles of channel improvement. There are 59.68 square miles of drainage above dams, with total storage of 23,014 acre-feet (3,594 acre-feet sediment, 19,420 acre-feet floodwater) with a surface area of normal pools of 522 acres. The total estimated project costs are $1,755,482 ($1,116,950 Federal and $638,532 non-Federal). Floodplain lands to be benefited are 8,563 acres. Estimated average annual damages that will be prevented are $60,394. Total estimated annual benefits are $79,113. The benefit-cost ratio is 1.5 to 1. The project is estimated to be 80 percent complete.

Tackett Creek Watershed

Located in Holmes County, Miss., this 8,850-acre project was authorized in 1957. The main project features are: (1) 175 acres (76 acres openland, 99 acres woodland) of critical area stabilization measures and 3,986 acres of land treatment measures costing an estimated $115,897; (2) four floodwater retarding dams; and (3) 6.5 miles of channel improvement. There are 5.97 square miles of drainage area

above dams, with total storage of 2,032 acre-feet (456 acre-feet sediment, 1,576 acre-feet floodwater) and surface area of normal pools of 152 acres. The total estimated project costs are $309,430 ($169,216 Federal and $140,214 non-Federal). Floodplain lands benefited are 1,600 acres. Estimated average annual damages prevented are $26,670; estimated total annual benefits are $27,976. The benefit-cost ratio is 2.8 to 1. The project was completed in 1965.

Tallahalla Creek Watershed

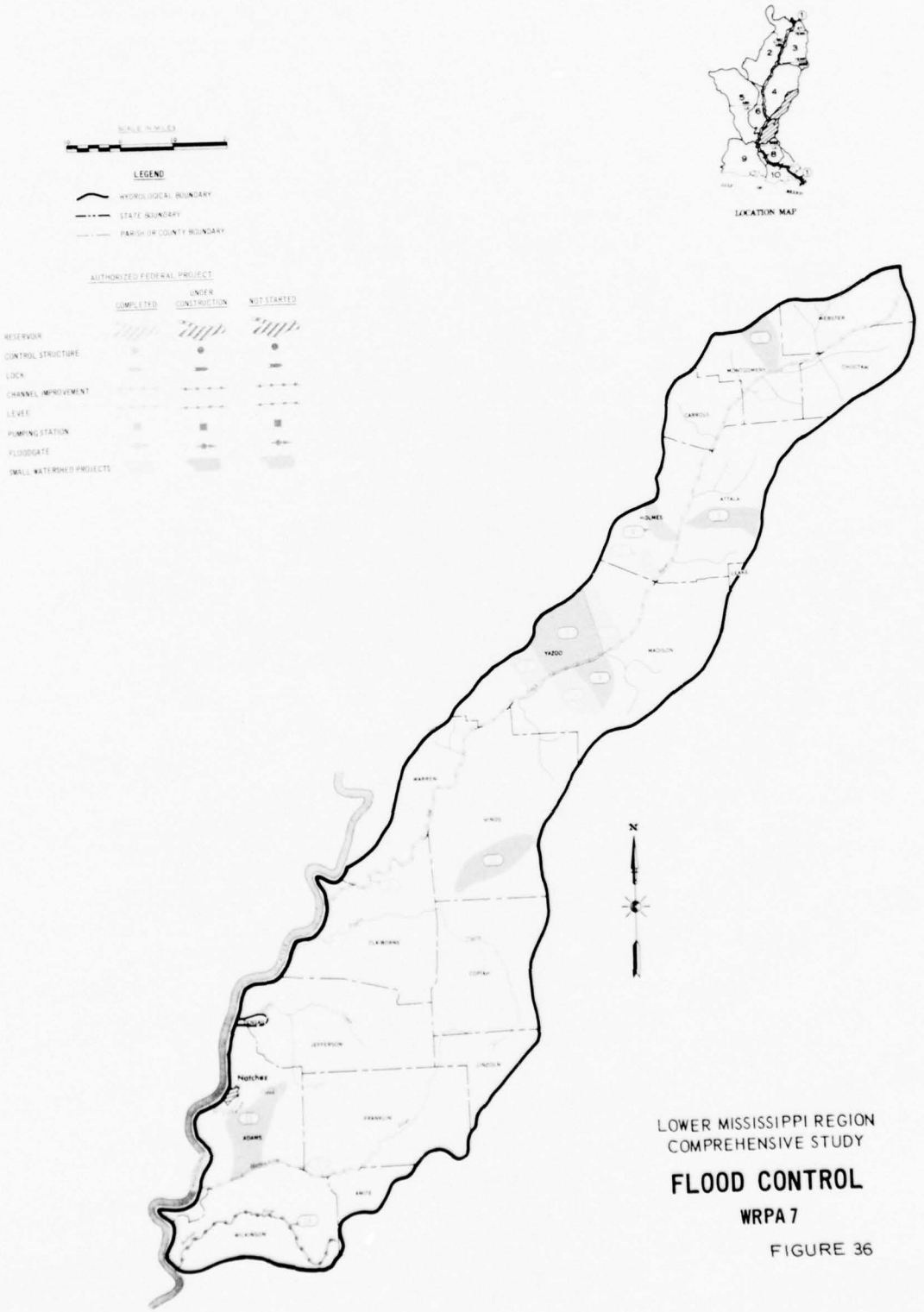
Authorized in 1961, this 47,593-acre project is located in Hinds County, Miss. The main project features are: (1) 273 acres (woodland) of critical area stabilization measures and 17,260 acres of land treatment measures costing an estimated $491,144; (2) three floodwater retarding dams; (3) one multipurpose dam for recreation, fish and wildlife; and (4) 11.4 miles of channel improvement. There is a drainage area above dams of 20.08 square miles with total storage of 6,500 acre-feet (754 acre-feet sediment, 5,471 acre-feet floodwater, 275 acre-feet recreation) with a surface area of normal pools of 283 acres. The total estimated project costs are $1,049,381 ($503,194 Federal and $546,187 non-Federal). Floodplain lands to be benefited are 5,700 acres. Estimated average annual damages that would be prevented are $29,322; total estimated annual benefits are $57,151. The benefit-cost ratio is 2.4 to 1. The project is inactive.

Typical watershed project.

PROJECT MAP INDEX
Flood Control - WRPA 7

Map Location No.	Name of Project	Agency	Year Complete	Project Uses	Description 1/
8.	Bentonia Watershed, Miss.	SCS	1971	FC	Proj. area, 24,404 ac. 9 floodwater retard. dams. 17.7 mi. chan. imp. Area stab. & land treat. meas. Tot. est. proj. cost $1,047,956. (L)
2.	Big Black River & Tributaries, Miss.	C of E, VXD	1941	FC	300 mi. chan. imp. incl. numerous cutoffs. Fed. cost $1,019,946. Damage prevented $767,000.
4.	Box Creek, Miss.	SCS	Not started	FC	Proj. area, 38,800 ac. 1 floodwater retard. dam. 22.5 mi. chan. imp. Area stab. & land treat. meas. Tot. est. proj. cost $939,934. (L)
14.	Buffalo River, Miss.	C of E, VXD	Not started	FC	Deferred indefinitely.
6.	Ellison Creek, Miss.	SCS	1970	FC, I	Proj. area, 19,500 ac. 3 floodwater retard. dams & 1 multipurpose dam for floodwater & irrigation. 19 mi. of chan. imp. Area stab. & land treat. meas. Tot. est. proj. cost $612,573. (L)
7.	Five Creeks, Miss.	SCS	Not started	FC	Proj. area, 93,189 ac. 7 floodwater retard. dams. 63.3 mi. chan. imp. Area stab. & land treat. meas. Tot. est. proj. cost $3,451,847. (L)
13.	Homochitto River, Miss.	C of E, VXD	1952	FC	35 mi. chan. imp. Fed. cost $205,000.
3.	Long Creek, Miss.	SCS	Est. 1974	FC, R	Proj. area, 40,306 ac. 5 floodwater retard. dams. 1 multipurpose dam for floodwater & recreation. 23.4 mi. chan. imp. Area stab. & land treat. meas. Tot. est. proj. cost $1,679,976 (L). See recreation data sheets.
1.	Mulberry Creek, Miss.	SCS	Not started	FC	Proj. area, 27,494 ac. 9 floodwater retard. dams. 20 mi. chan. imp. Area stab. & land treat. meas. Tot. est. proj. cost $1,015,532. (L)
9.	Panther Creek, Miss.	SCS	Not started	FC	Proj. area, 35,364 ac. 5 floodwater retard. dams. 19.6 mi. chan. imp. Area stab. & land treat. meas. Tot. est. proj. cost $1,924,763. (L)
10.	Persimmon & Burnt Corn Creek, Miss.	SCS	1966	FC	Proj. area, 33,018 ac. 4 floodwater retard. dams. 18.3 mi. chan. imp. Area stab. & land treat. meas. Tot. est. proj. cost $934,583. (L)
12.	Second Creek, Miss.	SCS	Est. 1973	FC	Proj. area, 60,056 ac. 10 floodwater retard. dams. 9.7 mi. chan. imp. Area stab. & land treat. meas. Tot. est. proj. cost $1,755,482. (L)
5.	Tackett Creek, Miss.	SCS	1965	FC	Proj. area, 8,850 ac. 4 floodwater retard. dams. 6.5 mi. chan. imp. Area stab. & land treat. meas. Tot. est. proj. cost $509,430. (L)
11.	Tallahalla Creek, Miss.	SCS	Not started (inactive)	FC, R, F&W	Proj. area, 47,503 ac. 3 floodwater retard. dams. 1 multipurpose dam for floodwater & recreation. 11.4 mi. chan. imp. Area stab. & land treat. meas. Tot. est. proj. cost $1,049,381. (L) See R, F&W data sheets.

1/ Degree of protection indicated as follows: Low (L) 1 to 10 yr. frequency.
Medium (M) 10 to 50 yr. frequency.
High (H) 50 to 100 yr. frequency.



LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

FLOOD CONTROL

WRPA 7

FIGURE 36

NAVIGATION

Homochitto River, Mississippi

The River and Harbor Act of 1899 authorized improvement of the Homochitto River for navigation. Approximately $16,000 was expended for improvement of the channel and $9,000 expended for maintenance. The head of navigation is the mouth of Sandy Creek, about 20 miles from the Mississippi River. This project is no longer maintained and is inactive.

Natchez Harbor, Mississippi

WRPA 7 has one major port, Natchez, Mississippi. The public terminal and industrial park have 4,500 feet on the Mississippi River waterfront. The industrial park has approximately 300 acres. Low water at the public terminal is 15 feet. A 9-foot depth is maintained on the Mississippi River.

Natchez Harbor, Mississippi.

Section 205 of the Flood Control Act of 1948, as amended by Public Law 685, 84th Congress, provided for construction of a levee with combination pumping plant and floodgate to protect the port area from floods. Construction was completed in 1968 at a cost of $538,000.

Storage facilities at the port consist of a 5,360-square foot warehouse, 3,000-square foot open-shed storage, and 35,000-square foot paved storage. A contract has been let to increase the warehouse by 7,000 square feet.

Loading equipment consists of a 65-ton capacity, pedestal mounted, gantry crane.

The 1970 traffic for the port area was 489,156 tons.

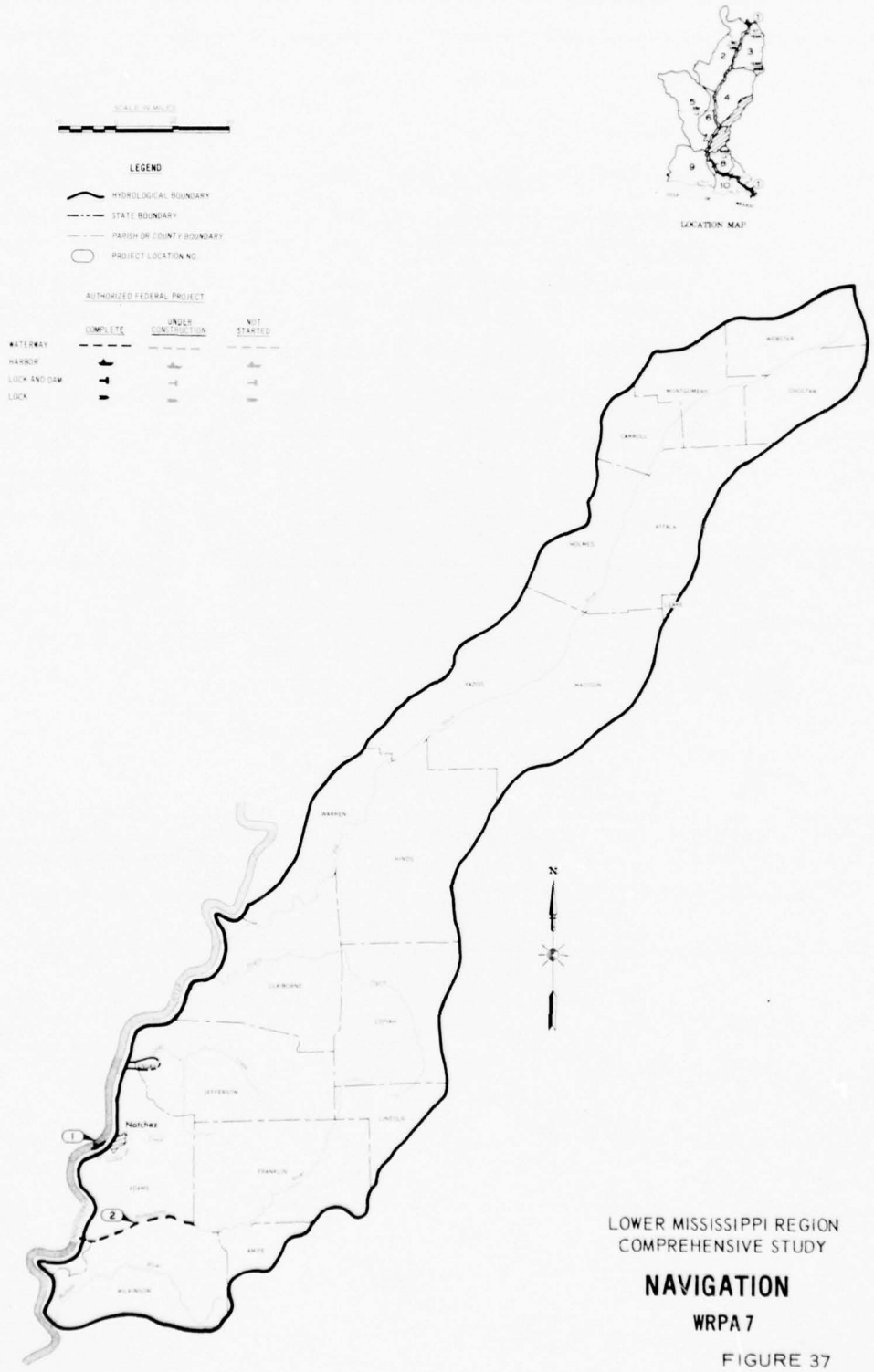
A brief description of terminal facilities along the Mississippi River in WRPA 7 is shown on table 25.

Table 25 - List of Mississippi River Terminals, Docks, Mooring Locations, and Warehouses in WRPA 7

AHP Mile	Location	Owner or Operator	Type of Service	Shelter or Warehousing	Cargo Handling Equipment	Remarks
364L	Natchez, Miss.	Natchez Pulpwood & Timber Co.	Fuel dock	Fuel tank	Pipeline	No RR connections
364L		Humble Oil Co.	Fuel dock	None	None	No RR connections. Dock barge & small boat repairs
364L		City of Natchez	City ramp	None	None	No RR connections. Sloping concrete ramp
363L		Missouri Pacific Railroad Company	Transfer of railroad cars to barges	None	None	Miss. Central Railroad. Tracks to river
363L		J. M. Jones Lumber Co.	Lumber mill	None	Derrick barge	No RR connections
362L		Stewart Concrete & Material Co.	Cement unloading	None	Unloading dock	No RR connections
362L		St. Catherine Gravel Co.	Gravel & sand	None	Paved ramp	No RR connections
362L		US Coast Guard	Aids to navigation	Ofc & stg. bldg.	Tramway	No RR connections. Mooring dolphins
362L		Adams County Port Commission	Chemical dock	Plant & stg. tanks	Dock & pipeline	Miss. Central Railroad. Mooring dolphins
361L		Adams County Port Commission	Terminal facilities	Cargo storage	Dock & derrick	Miss. Central Railroad. Ofc. & warehouses
361L		Natchez Boat Store	Boat Store	Office barge	None	No RR connections. Concrete ramp
361L		Cargill, Inc.	Grain	None	Conveyor	No RR connections. Mooring barge
361L	Natchez, Miss.	International Paper Co.	Log unloading	None	None	No RR connections

PROJECT MAP INDEX
Navigation and Harbors-WRPA 7

Map Location No.	Name of Project	Agency	Year Complete	Project Uses	Description
2.	Homochitto River, Miss.	C of E, VXD	-	N (Inactive)	Chan. imp. in early 1900's for navigation. Cost $25,000. 20 mi. now navigable.
1.	Natchez Harbor, Miss.	C of E, VXD	-	N	4,500 ft. on Miss. R. waterfront. 9-ft. Miss. R. chan. 300-ac. ind. park. 489,150 tns. in 1970.



LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

NAVIGATION

WRPA 7

FIGURE 37

RECREATION
AND
FISH AND WILDLIFE

General

Human population density in WRPA 7 is the lowest in the Lower Mississippi Region. This WRPA has few large lakes and streams. Primary land use is for timber.

Recreation

WRPA 7 has 252,910 acres of land available for outdoor recreation, including 210,080 acres Federally owned, 28,429 acres State owned, 11,054 acres of county and quasipublic lands, and 275 acres municipal, local government and school board lands. Additionally, there are 3,072 acres of lands in private ownership.

WRPA 7 has 38,562 acres of slack water and about 450 miles of stream suitable for recreation. Developed recreation facilities include 84 acres for camping, 152 acres for picnicking, 54 acres for playing outdoor sports and games, 24 acres for swimming, and 58 acres for boat ramps.

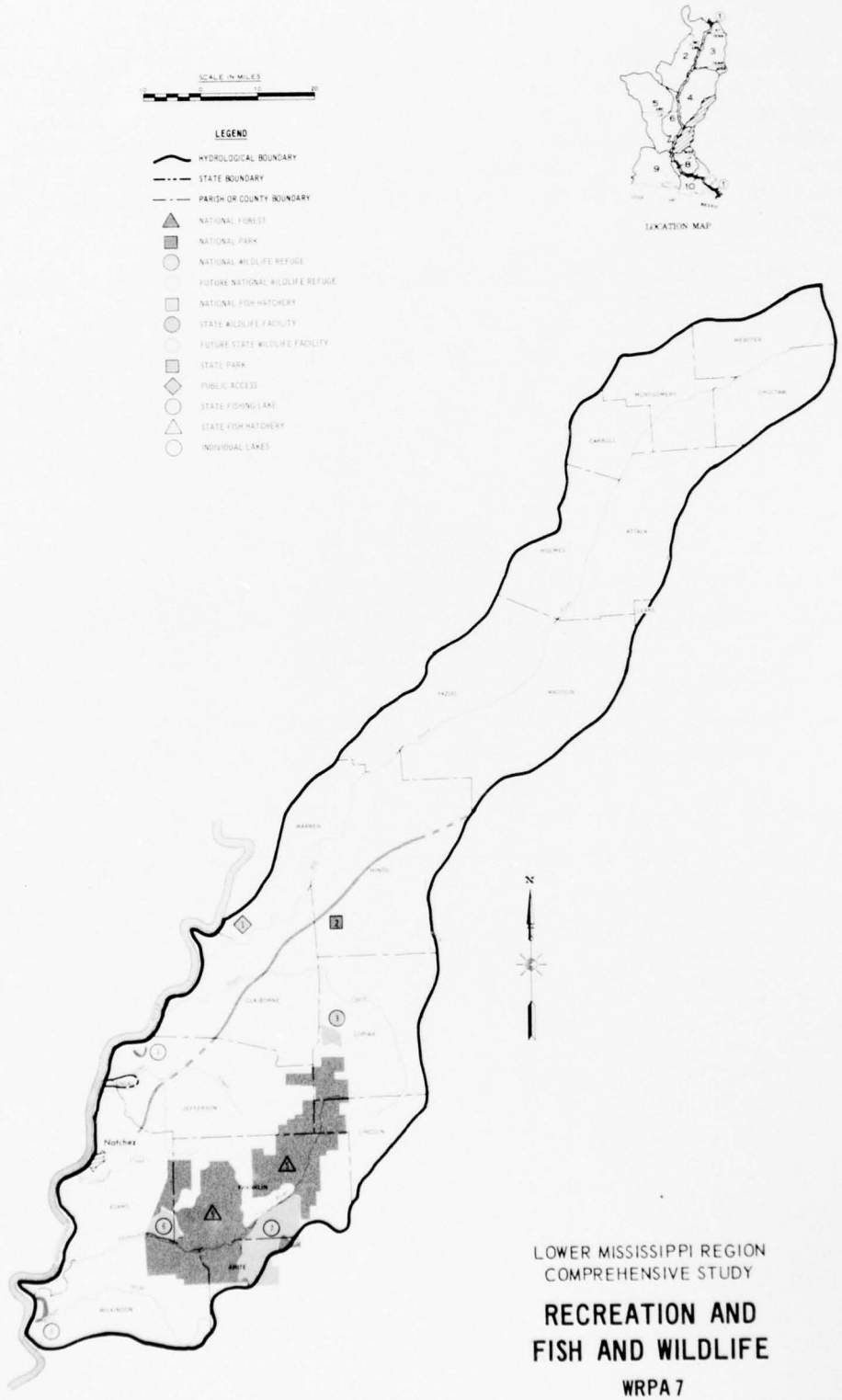
Fish and Wildlife

WRPA 7 water related fish and wildlife resources include 56,000 acres of lakes between two and 40 acres in size, 38,000 acres of lakes over 40 acres in size, 450 miles of fishable streams, 2,510,000 acres of forest land, and 49,000 acres of wetland. Ponds under two acres in size are abundant, but as yet have not been inventoried. Included in the lake acreage figures are two Mississippi River oxbow lakes. WRPA 7 water-related fish and wildlife facilities include State ownership of three wildlife management areas, one park, and one public launching ramp. Federally owned facilities include a national forest and park. Numerous private fish and wildlife facilities exist, but have not been inventoried. All areas are capable of supplying wildlife-oriented recreation consisting primarily of bird watching and also of nature photography and nature study. Such use is generally nonconsumptive.

PROJECT MAP INDEX
Recreation, Fish, and Wildlife Facilities - WRPA 7

Map Location No.	Name of Project	Agency	Project Use	Description 1/
6.	Adams County Wildlife Mgmt. Area	Miss. Game & Fish Comm.	F&W	Moderate F&W rating. 16,000 acres. Small amounts of fishing. Insignificant waterfowl use.
1.	Big Black River Public Access	Miss. Game & Fish Comm.	R, F&W	High F&W rating. Boat launching ramp, public access area.
3.	Copiah County Wildlife Management Area	Miss. Game & Fish Comm.	F&W	Moderate F&W rating. 6,500 acres. No waterfowl use, small amounts of fishing.
5.	Homochitto National Forest	U. S. Forest Service	R, F&W	Moderate F&W rating. 189,000 acres. Insignificant waterfowl use. 3 recreation areas for camping (25 units), picnicking (22 units), swimming, boating, & fishing.
7.	Homochitto Wildlife Management Area	Miss. Game & Fish Comm.	F&W	Moderate F&W rating. 51,500 acres. Insignificant waterfowl hunting. Small amounts of fishing.
8.	Lake Mary		R, F&W	High F&W rating. Miss. River oxbow lake. Fishing & waterfowl use.
2.	Natchez Trace National Parkway	National Park Service	R, F&W	8,000 acres. High WOR use. Some fishing. Camping and picnicking facilities are available at various areas along the Parkway.
4.	Rodney Lake		R, F&W	High F&W rating. Miss. River oxbow lake. Fishing & waterfowl use.

1/ WOR = Wildlife oriented recreation
F&W = Fish and wildlife
F&W* = Supplies only nonconsumptive fish and wildlife oriented recreation



LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

RECREATION AND FISH AND WILDLIFE

WRPA 7

FIGURE 38

POWER

The Natchez plant of the Mississippi Power and Light Company is the only steam-electric plant in the area. This plant has installed capacity of 66.0 MW, uses towers for cooling, and takes its make-up water from wells. Net generation for 1970 was 292,542,000 kilowatt-hours. Electric power needs in the area are supplied primarily through the transmission and distribution system of the Mississippi Power and Light Company.

A nuclear plant with 1,250.0-MW generating capacity is being planned for operation in 1980.

PROJECT MAP INDEX
Power Plants - MRPA 7

Map Location No.	Name of Plant	Owner of Plant	Type of Plant	Type of Water Supply	River	Installed Capacity (31 Dec 70) (MW)	Annual 1970 Production (1000 kwh)	Remarks
			Existing					
1.	Natchez	Miss. Power & Light Co.	S	Deep Wells		66.0	292,452.0	

Map Location No.	Name of Plant	Owner of Plant	Type of Plant	Type of Water Supply	River	Installed Capacity (MW)	Date
			Planned Additions				
2.	Grand Gulf No. 1	Miss. Power & Light Co.	N		Mississippi	1,250.0	1980

LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

POWER

WRPA 7

FIGURE 39

WATER SUPPLY AND SEWAGE TREATMENT

General

Water Resources Planning Area 7 covers all or part of 18 counties in Mississippi. Because data herein is available only on a county-wide basis, hydrologic boundaries have been adjusted to conform to county lines. Ten counties fall within these boundaries and are considered in municipal, industrial, and agricultural water use and sewage treatment data collection. These counties have been further subdivided into two subareas.

In 1970, within WRPA 7, 94.6 MGD was required to meet the municipal, industrial, and agricultural water withdrawal requirements. Of this, 93.8 percent was supplied by groundwater sources. Groundwater withdrawals accounted for all of the municipal water used, 99.3 percent of the industrial water used, and 40 percent of the agricultural water used.

Sewage treatment was provided in 11 percent of the communities and serviced 31.5 percent of the population which utilized the area's municipal water distribution systems in 1970. The remaining 68.5 percent of the municipally serviced population utilized spetic tanks or their sewage was disposed untreated.

1970 Municipal Water Supply

In 1970, municipal water systems within the WRPA serviced 70 communities, which had a combined population of 90,602 people, and varied in size from 35 people at Williamsville, Miss., to almost 19,700 people in Natchez, Miss. The average daily municipal water withdrawal within the WRPA was 12 MGD. During July, the peak municipal water use month in 1970, the average daily use was 140 MGD. All of this water was supplied from groundwater sources. The average daily withdrawals resulted in a 133 GPCD use in areas serviced by central water systems. This compares with a national average of 166 GPCD.

1970 Industrial Water Supply

Industrial activity within WRPA 7 during 1970 required a daily average water withdrawal of 73.6 MGD. Groundwater supplied 99.3 percent of this withdrawal and surface sources supplied 0.7 percent.

1970 Agricultural Water Supply

In addition to the municipal and industrial water withdrawals, agricultural withdrawals required 5.4 MGD for use in the irrigation of 4,281 acres and 3.6 MGD for use in the raising of livestock and poultry in 1970. Of the water used, 40 percent is supplied from groundwater and 60 percent from surface water sources.

1970 Sewage Treatment Facilities

Primary and secondary treatment was provided in eight of the communities that utilized a municipal water distribution system in 1970. These treatment facilities provided service for 28,574 people. There was, however, one community with population over 1,000 that did not provide any centralized sewage treatment.

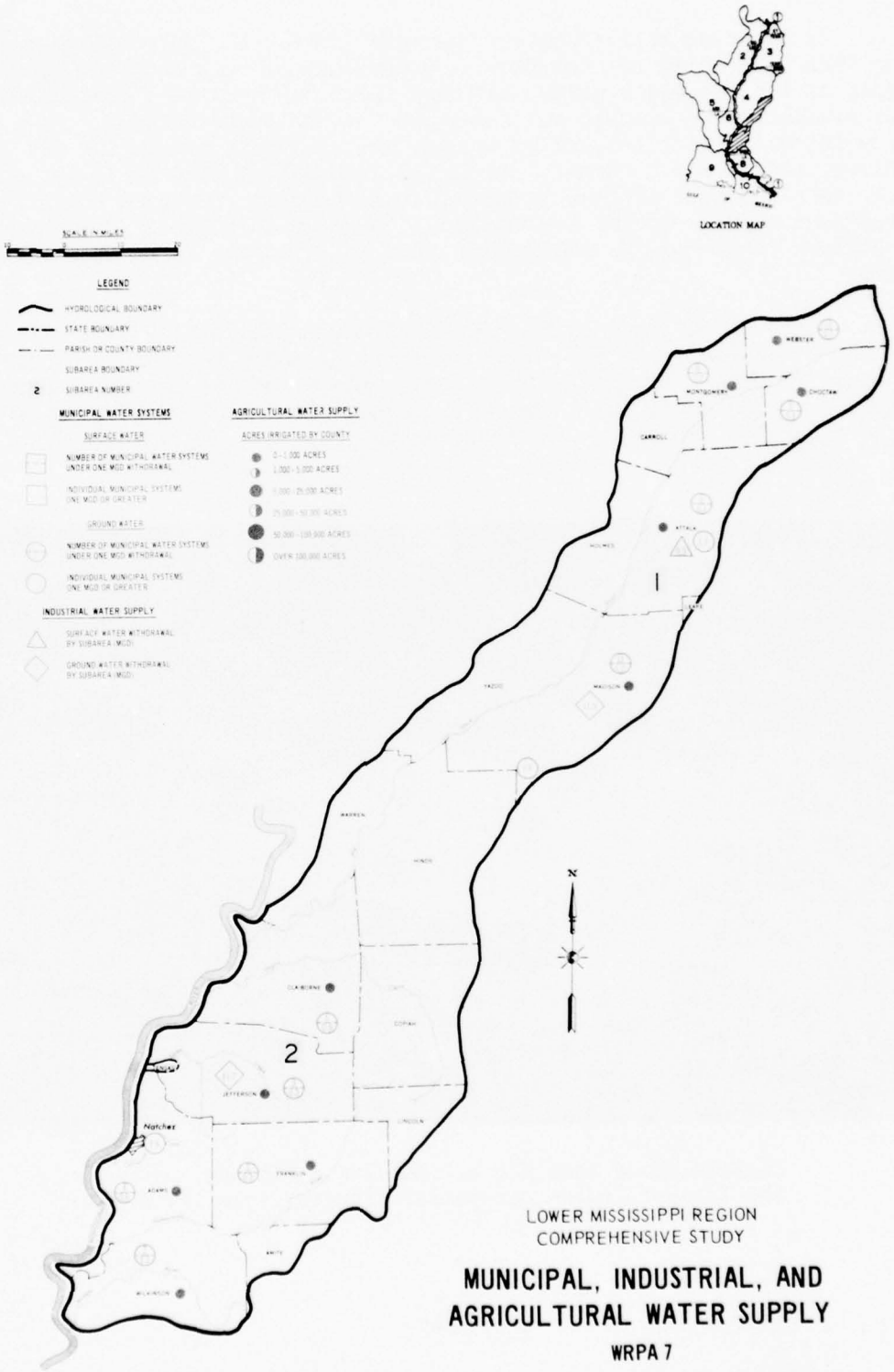
PROJECT MAP INDEX

Municipal, Industrial, and Agricultural Water Supply and Sewage Treatment Facilities - WRPA 7

Subarea / County	Population	Municipal Water Use: No. systems	Municipal Water Use: Withdrawal (MGD) 1/ Ground	Surface	Total	Industrial Water Use: Withdrawal (MGD) 1/ Ground	Surface	Total	Agricultural Water Use: Withdrawal (MGD) 1/ Ground	Surface	Total	Sewage Treatment Facilities: Secondary Treatment Number Plants	Population Serviced	Primary Treatment Number Plants	Population Serviced	No Treatment 2/ Number Communities	Population
7-1					11.9	.5	12.4	2.0	2.9	4.9							
Attala	11,511	10	1.5	1.5							1	7,266					
Choctaw	3,915	7	.6	.6													
Madison	18,553	14	3.0	3.0							1	10,503					
Montgomery	8,036	8	1.2	1.2													
Webster	5,745	11	.7	.7							1	1,792					
7-2					61.2		61.2	1.6	2.5	4.1							
Adams	37,380	5	3.2	3.2											1	19,712	
Claiborne	7,359	5	.9	.9							1	2,589					
Franklin	2,864	5	.3	.3							1	1,146					
Jefferson	7,705	3	.3	.3							1	1,725					
Wilkinson	2,534	2	.3	.3							2	3,553					
Total	90,602	70	12.0	12.0	73.1	.5	73.6	3.6	5.4	9.1	8	28,574			1	19,712	

1/ All figures are daily averages.

2/ Only denotes communities of 1,000 or greater population.



LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

MUNICIPAL, INDUSTRIAL, AND AGRICULTURAL WATER SUPPLY

WRPA 7

FIGURE 40

ARCHEOLOGY AND HISTORY

At the time this inventory was made (1970), the only drainage area in WRPA 7 in which any substantial archeological work had been done was that of the Big Black River, although there had been some concentrated excavations near Natchez and along the Natchez Trace Parkway. As a result, only 104 sites are on record, most of which are on the Big Black River, and of which there is so little information that it is not possible to place most of them in the cultural context. Harvard University has been working in the area recently, and the information they have obtained should now be available. Much is still not known about this area.

Sites indentified in this WRPA include: 2 historic, 8 Mississippian, 2 woodland, and 92 unknown. Figure 41 shows the number of sites occupied during each period by county. Since some of the sites have been occupied during more than one period, the number of sites shown on the figure do not agree with those above.

Emerald Mound near the Natchez Trace Parkway. One of the largest Indian ceremonial structures in the U. S.

Although a relatively small area, WRPA 7 does have a significant number of important historic sites and buildings, many of which are related to the Civil War and early settlement of Mississippi, particularly along the Mississippi River itself. The town of Natchez abounds with historic buildings and sites, and the nearby countryside contains a number of homes and plantations that relate to the antebellum splendor of the Plantation South. Fatherland Plantation Site, south of Natchez, is one of the more important historic spots in this area, visited and recorded by many early explorers.

The loess bluffs along the eastern banks of the Mississippi River afford welcome viewpoints from which travelers can view the river and surrounding countryside. The area includes six rivers and their tributaries, all draining into the Mississippi. For the most part, this is upland country, as opposed to the western banks of the Mississippi River, and not extensively farmed, leaving much forest lands that add to the aesthetic appeal of the area.

Restored Mount Locust with its frontier furniture and utensils, the earliest inn on the Natchez Trace - now Natchez Trace Parkway.

PROJECT INDEX
Historic Sites - WRPA-7

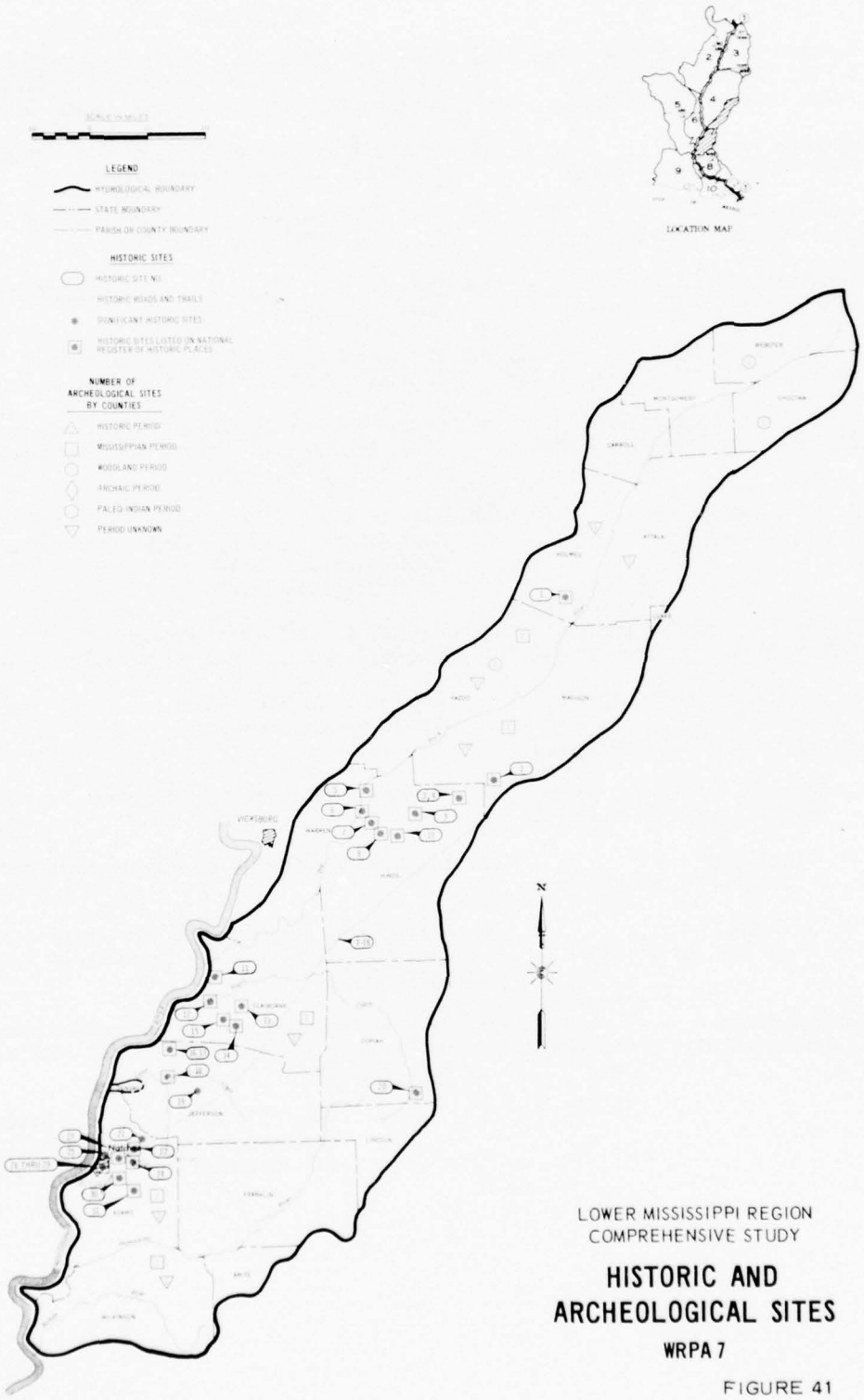
Map No.	Name		Description
6	Big Black River Battlefield Warren and Hinds Counties, Miss.	NR	Site of major Union victory on May 17, 1863. Located near Bovina.
14	Centers Creek Mound Claiborne County, Mississippi	NR	One of the finest Coles Creek-type archeological sites in Mississippi. Located north of Russeau.
8	Champion Hill Battlefield Hinds County, Mississippi	NR	Site of decisive battle of the Vicksburg campaign. Fought on May 16, 1863. Located 4 miles southwest of Bolton.
2	Chapel of the Cross Madison County, Mississippi	NR	Early Episcopal parish consecrated on September 19, 1852. Outstanding 19th century Gothic Revival Church. Mannsdale, Mississippi.
23	D'Evereaux Adams County, Mississippi	NR	Antebellum mansion built in 1840. Located 1 mile northeast of Natchez.
27	Dunleith Adams County, Mississippi	NR	Located at 84 Homochitto Street in Natchez. A two-story plastered brick structure built in 1855.
7	Dupree Mound and Village Archeological Site Hinds County, Mississippi	NR	Burial mound with 35 excavated burials. Located near Edwards. Early Mississippian Period.
21	Emerald Mound Adams County, Mississippi		Large Indian mound north of Natchez located just off Natchez Trace.
1	Eureka Masonic College Holmes County, Mississippi	NR	Historic southern college on Mississippi Route 17.
31	Fatherland Plantation Site Adams County, Mississippi	NR	Most thoroughly documented historic Indian site in the southeastern United States. Located 3 miles southeast of Natchez.
5	Floyd Mound Hinds County, Mississippi	NR	Undisturbed conical burial mound located in Bovina vicinity. Mississippian Period.
11	Grand Gulf Claiborne County, Mississippi	NR	Confederate fortification overlooking Mississippi River in 1863.
25	Historic Natchez Adams County, Mississippi		Numerous historic and antebellum structures unique in design and construction.
24	Jefferson College Adams County, Mississippi	NR	Historic college located in Washington. Built in 1802.
26	King's Tavern Adams County, Mississippi	NR	Historic tavern built prior to 1789. Believed to be the oldest existing structure in Natchez.
18	Laurel Hill Plantation Jefferson County, Mississippi	NR	Architecturally significant white two-story frame home constructed in 1815. Located 2 miles southeast of Rodney.
30	Longwood Adams County, Mississippi	NR	Located 1 1/2 miles southeast of Natchez. Largest and most elaborate octagonal house built in the United States. Built in 1860.
T-23	Mail Route to Natchez Two Counties, Mississippi		Eighteenth century route originating in Louisiana and ending at Natchez. Exact location not recorded at present. Route of commerce and travel between major trade centers.
22	Mistletoe Adams County, Mississippi	NR	Located northeast of Natchez on Mississippi 554. Built in 1807 by pioneer John Bisland. A rare documented product of slave craftsmanship.
29	Monmouth Adams County, Mississippi	NR	Located at corner of East Franklin Street and Melrose Avenue in Natchez. Austere two-story brick residence with ornate balconies and columns. Built in 1820.

(NR--This site is on the National Register of Historic Places)
(NP--National Park)

PROJECT MAP INDEX
Historic Sites - WRPA 7
(Continued)

Map No.	Name		Description
28	Natchez Bluff and Under-The-Hill Historic District Adams County, Mississippi	NR	Site of Fort Rosalie built by French in 1730. Also site of Natchez Landing--significant in development of the world's busiest cotton market.
T-18	Natchez Trace Four Counties, Mississippi	NP	Famous trail, later a road, from Natchez, Mississippi, to Nashville, Tennessee.
9	Peyton House Hinds County, Mississippi	NR	Home of John Peyton, founder of town of Raymond. Located on Clinton Road, Raymond.
3	Pocahontas Mound A Hinds County, Mississippi	NR	Large Indian mound substantially unaltered. Near village of Pocahontas.
4	Pocahontas Mound B Hinds County, Mississippi	NR	Burial mound probably associated with "Mound A." Located northeast of "Mound A" near Pocahontas.
12	Port Gibson Battlefield Claiborne County, Mississippi	NR	Site 4 miles west of Port Gibson where on May 1, 1863, Confederate General Bowen engaged Grant's army in a holding action.
10	Raymond Battlefield Hinds County, Mississippi	NR	Site of May 12, 1863, defeat of General Gregg's Confederate force by Grant's Vicksburg attack. Located about 3 miles southwest of Raymond on Mississippi 18.
17	Rodney Presbyterian Church Jefferson County, Mississippi	NR	Located in village of Rodney. Picturesque and historic church. River boat pilots' landmark.
16	Sacred Heart Roman Catholic Church Jefferson County, Mississippi	NR	Located in Rodney. Built in 1868. Outstanding Gothic architecture.
19	Springfield Plantation House Jefferson County, Mississippi	NR	Located 8 miles west of Fayette. Built in 1800.
13	Van Dorn House Claiborne County, Mississippi	NR	Historic mansion of lawyer-merchant Peter Van Dorn.
20	Wesson Hotel Copiah County, Mississippi	NR	Historical, 28-guestroom hotel near Illinois Central Railway Station in downtown Wesson. Built in 1877.
15	Windsor Ruins Claiborne County, Mississippi	NR	Site of immense, stately antebellum mansion built in 1861. Located 12 miles southwest of Port Gibson.

(NR--This site is on the National Register of Historic Places)
(NP--National Park)

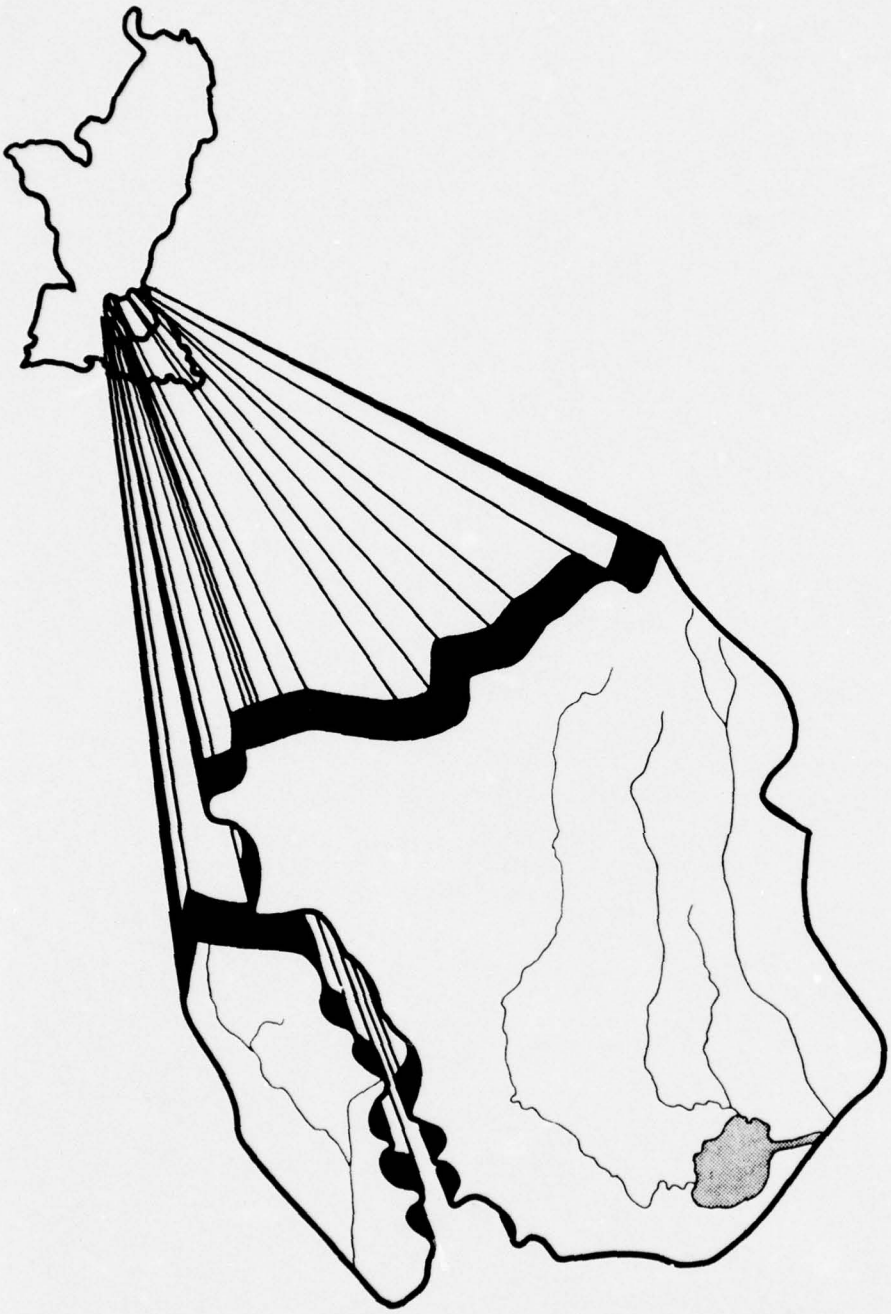


LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

HISTORIC AND ARCHEOLOGICAL SITES

WRPA 7

FIGURE 41



WRPA 8

W R P A 8

GENERAL

Area of Study

WRPA 8 is composed of the drainage areas of streams in the general vicinity of Baton Rouge, Louisiana. The study area covers 5,705 square miles in Mississippi and Louisiana, 6 percent of the total area of the region. The WRPA is divided into two areas by the Mississippi River (WRPA 1). The area east of the river, which consists of rolling hills and alluvial lowlands with a fringe of tidal marsh at the shorelines of Lakes Maurepas and Pontchartrain is bounded on the north by the drainage divides of the Buffalo and Homochitto River Basins, on the east by the divides of the Pearl and Chefuncta River Basins, and on the south and west by the east bank of the Mississippi River between the latitudes of Fort Adams, Mississippi, and Laplace, Louisiana. The area west of the Mississippi River lies between the latitudes of Morganza and White Castle, Louisiana, and is bounded by the west bank levee of the Mississippi River on the east and the East Atchafalaya Basin Protection Levee on the west. The terrain consists of relatively flat alluvial lowlands. Principal streams in the WRPA include the Amite, Tickfaw, and Tangipahoa Rivers and Bayou Grosse Tete.

Baton Rouge, Louisiana, is the largest city in the WRPA. Other major cities include Hammond and Scotlandville, Louisiana. The 1970 population of the ten Louisiana parishes and one Mississippi county that comprise the economic area of WRPA 8 was approximately 547,000 or about nine percent of the Lower Mississippi Region population. Major economic activities in the area include mineral production, petrochemical and basic metals processing, agriculture, harvesting and processing of forest products, and waterborne commerce. Commercially important minerals produced in the area are oil and gas, sand and gravel, salt, and lime. Major manufacturing industries located in the area are chemical and allied products, food and kindred products, petroleum refining, and paper and allied products. Agriculture also plays an important role in the economy, with much of the agricultural land in pasture.

Hydrologic Characteristics

The Amite River rises in southwestern Mississippi and flows in a south and southwesterly direction for a distance of 170 miles to Lake Maurepas. In the reach below mile 36, the channel of the Amite meanders through a heavily timbered swamp with little relief. Between Bayou Manchac and the mouth of Comite River (mile 54), the Amite meanders through a narrow timbered valley cut through low pine-covered hills. From this juncture, the Amite has a steep bed slope to its source, and

is a typical hill country stream. The principal tributaries of the Amite River are Bayou Manchac, Comite River, and Colyell Creek.

The Tickfaw River has its source in southwestern Mississippi and flows in a southerly direction through St. Helena, Livingston, and Tangipahoa Parishes to Lake Maurepas. The Natalbany River, from its head to mile 25, flows through low pine hills, the lower 25 miles of channel winds through heavily timbered swamps to Lake Maurepas. The principal tributaries of the Tickfaw River are Blood, Natalbany, and Ponchatoula Rivers.

The Tangipahoa River originates in southwest Mississippi near the town of McComb and flows in a southerly direction for a distance of about 110 miles to its terminus in the northwest portion of Lake Pontchartrain. The stream varies in width from a few feet in the upper reaches to about 200 feet near the mouth. Streamflow is fairly rapid in the upper reaches, but becomes tidal in the lowlands adjacent to the lake.

The tide influences areas adjacent to Lakes Maurepas and Pontchartrain. Major hurricanes may raise the level of these lakes to elevations as high as 10 feet.

FLOOD CONTROL

Amite River and Tributaries, Louisiana

The project was authorized by the Flood Control Act of August 9, 1955 (House Document 419, 84th Congress, 2d Session).

The completed project, designed for flood control along the Amite River, consists of a 10.6-mile diversion channel from the Amite River at mile 25.3 to mile 4.8 of Blind River; enlargement of the Comite River from its mouth to Cypress Bayou; clearing and snagging of Amite River from its conjunction with the Comite at mile 54 to mile 35.7 at Bayou Manchac; enlargement and realignment of Amite River from Bayou Manchac to mile 25.3; clearing and snagging Bayou Manchac from the Amite to Ward's Creek.

The diversion channel is connected to the Amite River by a control weir which serves to retain low flows in Amite River. A small navigation channel through the control allows small boats to pass to and from the river and the diversion channel.

The State of Louisiana, Department of Public Works, constructed approximately 2.7 miles of the diversion channel and the Comite River enlargement as a substitute for the cash contribution required by the project authorization. Flood damages will be prevented on an area of 7,900 acres of cropland and over 860 acres of urban development. Average annual flood control benefits are estimated at $308,300. The project will afford a medium degree of protection.

Construction of this project was initiated in June 1957 and completed in February 1964, at a cost of $3,034,300. Cumulative benefits from flood damages prevented are estimated at $3,952,000.

Atchafalaya Basin, Louisiana

Descriptions of major features of this project are contained in WRPA 9. A drainage feature of the East Atchafalaya Basin protection levee, which is located in WRPA 10, is described below.

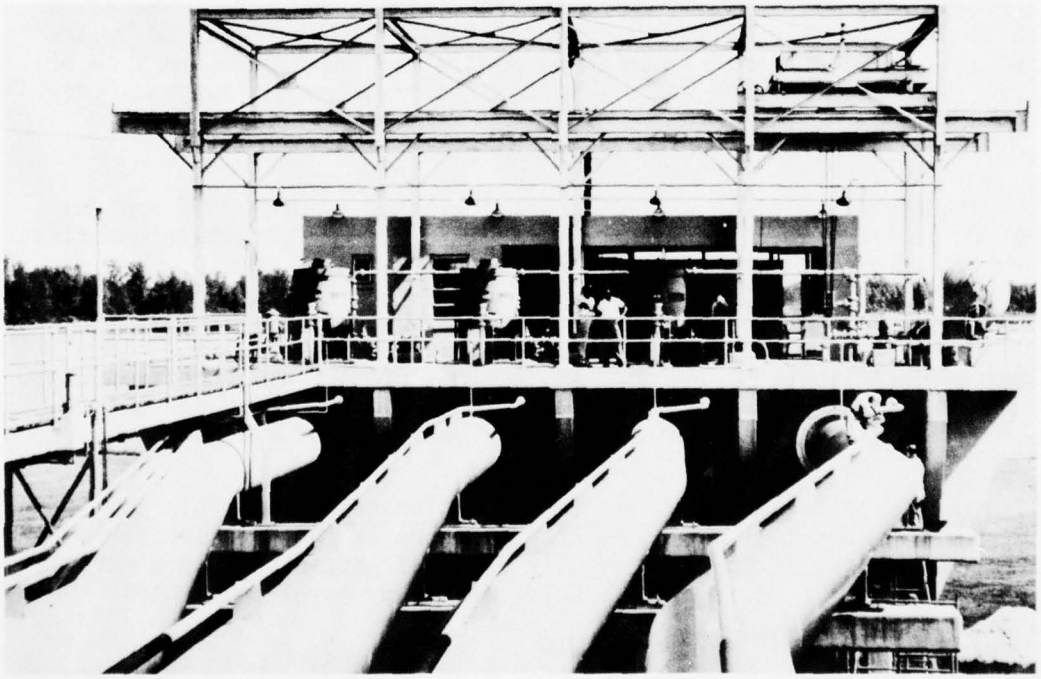
Lottie to Bayou Maringouin Borrow Pit Enlargement. This consists of the enlargement of the restricted sections of the landside borrow pit between a point one-quarter mile south of Lottie and Bayou Maringouin, a distance of 13 miles. Enlargement was completed in 1940 at a cost of $126,000.

Choctaw Bayou and Tributaries, Louisiana

The Choctaw Bayou project, authorized by Section 205 of the Flood Control Act of 1948, will provide flood protection to an area of 9,200 acres just west of Port Allen, La., by clearing and snagging of 19.9 miles of channel and channel excavation of 12.6 miles on the Choctaw Bayou and its tributaries. The project was approved on April 11, 1968, and a contract for construction of the project was awarded in February 1973. The estimated cost of the project is $717,000 Federal and $518,000 non-Federal.

Louisiana Department of Public Works Projects

This section includes drainage systems authorized to be planned and constructed by the Department of Public Works on its own or in cooperation with Federal, State, and local agencies engaged in such activities. Authorization is by Louisiana Revised Statutes of 1950, Title 38, sections 1 through 17. Local agencies include Police Juries, Drainage Districts, Levee Districts, and other legally constituted districts or agencies. Federal agencies are the Soil Conservation Service, U. S. Department of Agriculture, and the Corps of Engineers, U. S. Army.



Walter S. Lehmann Pumping Plant, Donaldsonville, Louisiana.

The projects are local undertakings with Federal and state assistance. Division of costs in parish-wide systems constructed in the period 1942 to about 1960 was 60 percent of cost contributed by local agency and 40 percent of cost plus engineering, planning, and construction supervision by the Louisiana Department of Public Works.

Principal improvement works consist of parish-wide planning of drainage systems to provide land drainage and protection against floods to agricultural, residential, business, and industrial areas and sites. Improvements also include major drainage streams which serve as an outlet for two or more drainage districts or parish drainage systems.

Principal works of improvement consist of excavation of new channels, enlargement and clearing and snagging of existing canals and streams, replacement of or alteration of inadequate drainage structures at crossings, construction of low water crossings and appurtenant water control structures.

Total improvements in WRPA 8 include 1,450 miles of channel improvement at a cost of $6,888,919. A parish-wide breakdown of these improvements is shown in the project map index on page 338.

Mississippi River and Tributaries

(See WRPA 1)

Panama Canal-Conway Bayou Watershed Project

Located in Ascension Parish, La., this 43,780-acre Public Law 566 project was authorized in 1964. The main project features are: (1) 23,643 acres of land treatment measures costing an estimated $727,522 and (2) 25 miles of channel improvement. The total estimated project costs are $1,172,476 ($376,374 Federal and $796,102 non-Federal). Flood plain lands benefited are 23,600 acres. Estimated average annual damages prevented are $30,448; total estimated annual benefits are $60,896. The benefit-cost ratio is 2.4 to 1. The project was completed in 1968.

Other Small Projects

Clearing and snagging projects in WRPA 8, authorized under Section 2 of the Flood Control Act of 1937 and subsequent modifications are as follows: Bayou Francois, New River, Pontchatoula Creek, Selsers Creek, Yellow Water River, Natalbany River, Tickfaw River, Little Tangipahoa River. See project map index for further details.

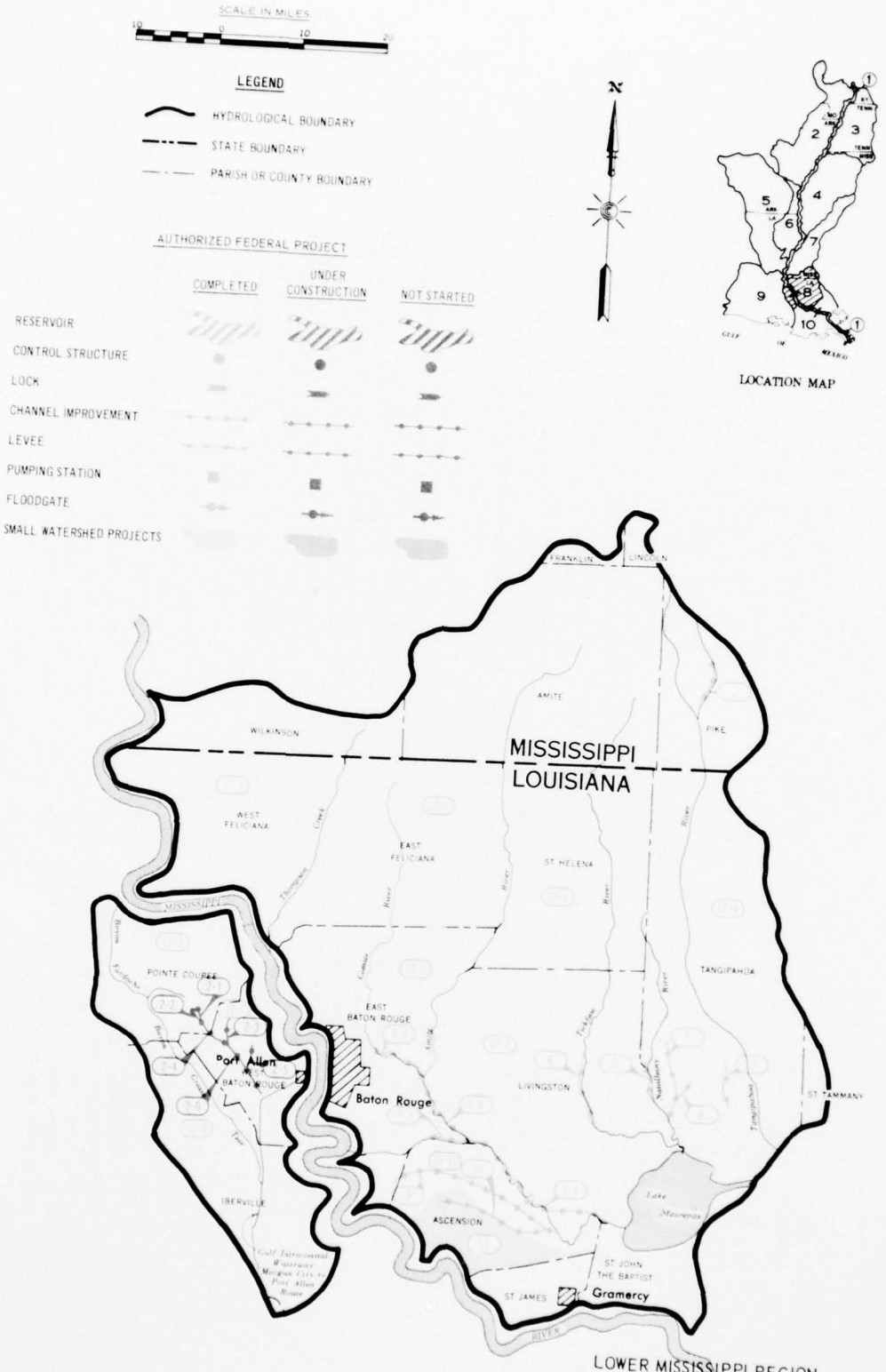
Aerial view of floodwater retarding structure showing protected lands in foreground.

This view depicts protective growth of kudzu on river banks.

PROJECT MAP INDEX
Flood Control - WRPA 8

Map Location No.	Name of Project	Agency	Year Complete	Project Uses	Description 1/
3.	Amite River & Tributaries	C of E, NOD	1964	FC & REC	Cost $3,034,300.
3-4.	Amite R. Diversion Chan				10.6 mi. div. chan. fm Amite R at mi. 25.3 to mi. 4.8 of Blind R. (M)
3-2.	Amite River				28.7 mi. chan. imp. (M)
3-3.	Bayou Manchac				4.8 mi. chan. imp. (M)
3-1.	Comite River				10.0 mi. chan. imp. (M)
10.	Bayou Francois	C of E, NOD	1948	FC	8.2 mi. chan. imp. Cost $13,500.
2.	Choctaw Bayou & Tribs.	C of E, NOD	Not started	FC	Est. cost (Jul 71) $1,235,000. Expenditures (Jul 71) $22,500.
2-6.	Choctaw Bayou				7.5 mi. chan. imp. (L)
2-4.	Bayou Chaplin				2.0 mi. chan. imp. (L)
2-1.	Bayou Cholpe				6.2 mi. chan. imp. (L)
2-2.	Bayou Sterling				2.7 mi. chan. imp. (L)
2-5.	Chamberlin Canal				2.7 mi. chan. imp. (L)
2-3.	Stumpy Bayou				14.1 mi. chan. imp. (L)
1.	Little Tangipahoa River	C of E, NOD	1956	FC	8.0 mi. chan. imp. Cost $28,819.
12.	Louisiana Department of Public Works Projects		1971	FC	
12-10.	Ascension Parish Drainage				Proj. area, 199,680 ac. 160 mi. chan. imp. Cost $1,225,183.
12-6.	East Baton Rouge Parish Drainage				Proj. area, 302,720 ac. 92 mi. chan. imp. Cost $1,835,645.
12-2.	East Feliciana Parish Drainage				Proj. area, 289,920 ac. 4 mi. chan. imp. Cost $35,631.
12-9.	Iberville Parish Drainage				Proj. area, 524,800 ac. 305 mi. chan. imp. Cost $1,120,532.
12-5.	Point Coupee Parish Drainage				Proj. area, 378,240 ac. 374 mi. chan. imp. Cost $1,169,811.
12-3.	St. Helena Parish Drainage				Proj. area, 268,160 ac. 16 mi. chan. imp. Cost $65,393.
12-4.	Tangipohoa Parish Drainage				Proj. area, 536,960 ac. 335 mi. chan. imp. Cost $764,062.
12-8.	Livingston Parish Drainage				Proj. area, 433,280 ac. 3 mi. chan. imp. Cost $21,296.
12-7.	West Baton Rouge Parish Drainage				Proj. area, 133,760 ac. 152 mi. chan. imp. Cost $499,679.
12-1.	West Feliciana Parish Drainage				Proj. area, 272,640 ac. 8 1/2 mi. chan. imp. Cost $151,687.
13.	Lottie to Bayou Maringouin Borrow Pit Enlargement	C of E, NOD	1940	FC	13.0 mi. channel enlargement. Cost $126,000.
5.	Natalbany River	C of E, NOD	1956	FC	5.0 mi. chan. imp. Cost $71,043.
9.	New River	C of E, NOD	1948	FC	8.7 mi. chan. imp. Cost $31,500.
11.	Panama Canal-Conway Bayou	SCS (566)	1968	FC	Proj. area, 43,780 ac. 25 mi. chan. imp. land treat. meas. Total est. project cost $1,172,476.
8.	Ponchatoula Creek	C of E, NOD	1949	FC	3.3 mi. chan. imp. Cost $10,464.
7.	Selser Creek	C of E, NOD	1950	FC	4.5 mi. chan. imp. Cost $4,958.
4.	Tickfaw River	C of E, NOD	1958	FC	16.3 mi. chan. imp. Cost $50,107.
6.	Yellow Water River	C of E, NOD	1950	FC	2.8 mi. chan. imp. Cost $3,136.

1/ Degree of protection indicated as follows: Low (L) 1 to 10 yr. frequency.
Medium (M) 10 to 50 yr. frequency.
High (H) 50 to 100 yr. frequency.



LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

FLOOD CONTROL

WRPA 8

FIGURE 42

NAVIGATION

Amite River and Bayou Manchac, Louisiana

The River and Harbor Act of January 21, 1927, and prior River and Harbor Acts provide for a channel 7-feet by 60-feet from Lake Maurepas to Port Vincent and removal of obstructions between that point and the Louisiana and Arkansas railway bridge across Bayou Manchac. Total length of improvement is about 44 miles.

The controlling depths (mean gulf level) are as follows: Amite River (January 9, 1970) Bar Channel, 4.0 feet; to mile 25.0, 10.0 feet; to mile 31.7, 10 feet; to mile 35.75, 8.0 feet; Bayou Manchac (October 1968) mile 0, 5.5 feet; to mile 4.5, 5.0 feet; snags above this point.

The project was completed in 1928 at a cost of $28,234.

Although no commerce was reported on this stream in 1970, it is heavily used for recreational purposes.

Aquatic Plant Control

Water hyacinth was introduced into the United States at the Cotton Exposition in New Orleans in 1884, and spread throughout southern Louisiana and Florida to such an extent that by 1898, the Congress was requested to intercede. Authorization was given to control this plant by River and Harbor Acts of March 3, 1899, House Document 91, 55th Congress, 3d Session, with the following acts dated June 13, 1902; March 3, 1905; March 2, 1907; July 25, 1912; and July 27, 1916. Operations began in 1900.

From 1902 to 1937, the hyacinth was controlled entirely by treating with sodium arsenite. During the 35 years of control by sodium arsenite operations were confined to about 300 miles of navigable waterways per year. Destruction by chemicals was abandoned in 1937 in favor of the quicker and more satisfactory method of destruction by mechanical means. Since the late 1940's, the use of the plant hormone 2 4-D gradually replaced mechanical destruction except in unusual cases.

Removal of the hyacinths is a continuing project for which funds are appropriated annually. Authorized under the project is extermination or removal of plants which are or may become obstructions to navigation in navigable waters of the states of Florida, Alabama, Mississippi, Louisiana, and Texas. The estimated annual cost for maintenance in Louisiana is $500,000.

Congress, on July 3, 1958, authorized a separate comprehensive project to control and progressively eradicate the water hyacinth, alligator weed, and other obnoxious aquatic plant growths from the navigable waters, tributary streams, connecting channels, and other allied waters in the states of North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Texas.

Expected benefits from the project would accrue to navigation, flood control, recreation, fish and wildlife, public health, and related water resources development purposes. Research for development of the most effective and economic control measures is an integral part of the project. The Corps of Engineers is presently working with the University of Southwest Louisiana and the U. S. Department of Agriculture in addition to conducting its own research programs to effectively control aquatic vegetation.

Amended by Public Law (PL) 89-298, 89th Congress, 2d Session, the project now includes the control and eradication of Eurasian water milfoil. In addition, other states have been added to the program.

Estimated total cost of the project under PL 89-298 is $5 million annually. The sum of $4,403,700 has been spent on this project in Louisiana by the U. S. Army Engineers.

Baton Rouge Port, Louisiana

The port of Baton Rouge, Louisiana, is on both banks of the Mississippi River within the parishes of East Baton Rouge, West Baton Rouge, Iberville, and Ascension. Its limits extend from about mile 168.3 above Head of Passes (lower Ascension Parish line) to about mile 255.2 above Head of Passes (upper East Baton Rouge Parish line) and include the Baton Rouge Harbor (Devil's Swamp) Barge Channel.

The port is located at the southern terminus of the 12-foot Mississippi River channel and at the head of the deep-draft channel. The port is also served by a direct connection with the Gulf Intracoastal Waterway via the Port Allen Lock and the Gulf Intracoastal Waterway Alternate Route which extends from Morgan City to Port Allen.

Construction of a slack water channel for barge traffic and an industrial expansion area for the port of Baton Rouge was authorized by the River and Harbor Act of July 24, 1946 and transferred to Flood Control, Mississippi River and Tributaries, under Flood Control Act of June 1948. The authorized channel dimensions are 12 feet in depth, 200 feet in width, and 5 miles in length; 2.5 miles were completed in 1959 at a cost of $699,200 and the remaining 2.5 miles will be constructed when development of the initially constructed portion warrants expansion to project limits. Traffic in 1969 was 138,245 tons.

On the Mississippi River some 230 miles above the mouth of the river is the Port of Baton Rouge, the seventh largest port in the Nation.

Fifty-two piers, wharves, and docks are located within the port. Thirty-two of these waterfront facilities are on the left bank, 17 are on the right bank of the Mississippi River, extending from about mile 169.3 to mile 234.3 above Head of Passes, and three are on the Baton Rouge Harbor (Devil's Swamp) Barge Channel. Cargo movement in 1970 was 45,535,281 tons. A brief description of terminal facilities along the Mississippi River adjacent to WRPA 8, including those at Baton Rouge, is shown on table 27.

Table 26 summarizes the piers, wharves, and docks at the port by primary purpose for which used or type of service offered.

Table 26 - Baton Rouge Port Piers, Wharves and Docks

Primary Purpose for Which Used	No.
Cargo handling:	
Bauxite and alumina	3(1)
Bulk salt, chlorine, and liquid caustic soda	1
General cargo:	
By barge	1
Foreign and domestic	2(2)
Grain, molasses, benzene, and muriatic acid (one each)	4
Liquid ammonia	3(3)
Petroleum products, crude oil, petro-chemicals, and chemicals	14
Phosphate, fluorspar, dry and liquid sulphur, liquid fertilizer, ammonia, and chemicals	1
Shell	8(4)
Sulfuric acid and liquid sulphur	2(5)
Landing for passenger and vehicular ferries	4
Marine services and repairs:	
Handling boat stores and marine supplies	2
Mooring	2
Mooring in connection with marine repairs and outfitting	3
Unused facilities at time of survey	2
TOTAL	52

(1) One is also used for receipt of shell, and two, for receipt of liquid caustic soda.
(2) One also handles scrap metal and molasses.
(3) One also handles dry bulk urea.
(4) One is also used for shipment of bulk cement.
(5) One is also used for receipt of petroleum products.

Waterfront facilities in the port area used exclusively by recreational craft are not included in this appendix.

Bayou Grosse Tete, Louisiana

The River and Harbor Act of 25 July 1912, provides for dredging a channel 5 feet by 60 feet, mean low water, (2 feet above mean low gulf level) and removing snags and trees from mouth (mile 0) to mile 29, 5 miles above Maringouin. Length of improvement is 29 miles.

The controlling depths (mean low gulf), (January 1970) are as follows: mile 0 to mile 2.1, 12.0 feet; (August 1958) mile 2.1 to mile 4, 4.5 feet; mile 4 to mile 11, 3.0 feet; mile 11 to mile 14.5 (Texas & Pacific Railway Bridge), 2.5 feet.

A channel 5 feet by 60 feet was completed between mile 0 and mile 10.3 in 1914, and a channel 5 feet by 40 feet was completed to mile 29 in 1916. Total cost of this work was $29,392.

Dredging the stream 20 feet wider above mile 10.3 remains to be done to complete the project. This portion of the project has been classified inactive.

The active portion of the project is completed at a cost of $29,392. Traffic reported in 1970 was 32,200 ton miles. Unmanufactured marine shells comprised the major cargo.

The Port Allen Lock serves to connect the Gulf Intracoastal Waterway System and the Mississippi River System at the Port of Baton Rouge.

Gulf Intracoastal Waterway Between Apalachee Bay, Florida, and the Mexican Border

(See WRPA 9 for Description)

Pass Manchac, Louisiana

The River and Harbor Act of June 24, 1910, provides for removal of snags and logs throughout the Pass (about 7 miles) and from the entrance bars in Lakes Maurepas and Pontchartrain. The Pass gives access to Lakes Pontchartrain, Maurepas, and adjacent areas for fishing, crabbing, and hunting.

The controlling depths (mean low gulf) (December 1969) are as follows: over bar north channel, (Pontchartrain), 4 feet; over bar south channel, (Pontchartrain), 5 feet; over bar north channel, (Lake Maurepas), 5.5 feet.

The project was completed in 1912 at a cost of $1,374. Major cargo in the Pass is shells, although tonnages vary greatly. Traffic reported in 1970 was 117,649 ton miles.

Tangipahoa River, Louisiana

The River and Harbor Acts of June 14, 1880 and June 10, 1872 provided for improvement by removal of overhanging trees, snags, and obstructions for a distance of 53 1/2 miles above the mouth.

Under Section 107 of the River and Harbor Act of 1960, as amended by Section 310 of the River and Harbor Act of 1965, an 8 foot x 100 foot navigation channel through the bar in Lake Pontchartrain was approved. The project was completed in January 1971 at a cost of $61,211.

This waterway is considered to have high recreation potential. State-developed swimming and picnicking areas are now open to the public.

Tickfaw, Natalbany, Ponchatoula, and Blood River, Louisiana

The River and Harbor Act of March 3, 1881, provides for removal of obstructions in Tickfaw River from mouth to mile 26; in Blood River from mouth to mile 4; in Natalbany and Ponchatoula Rivers, a distance of 15.5 miles. Mile 0 is at the mouth of each stream. Total length of improvement is 45.5 miles. Public access facilities are available for recreation and fish and wildlife use at Wadesboro and Springfield.

The controlling depths (mean low gulf) are as follows: Tickfaw River (January 1970) Bar Channel, 6 feet; to mile 2, (Natalbany River), 11 feet; to mile 7.6, (Blood River), 13 feet, to mile 17, 6 feet; (stream blocked at mile 17.5 by fallen trees); Natalbany River (January 1970) mile 0 to mile 4, 9 feet; to highway bridge at Springfield, 4.5 feet; Ponchatoula River (January 1970) to mile 2, 6 feet; to mile 3.85 (fixed bridge), 6 feet; Blood River (January 1970), to mile 2, 9 feet; to mile 3.8, 6 feet.

The project was completed in 1921 at a cost of $8,115. In 1970, no commerce was reported.

Table 27 - List of Mississippi River Terminals, Docks, Mooring Locations, and Warehouses in WRPA 8

AHP Mile	Location	Owner or Operator	Type of Service	Shelter or Warehousing	Cargo Handling Equipment	Remarks
260.4L	St. Francisville, La.	St. Francisville Paper Co.	Floating dock	None at river	Mounted crane with 70' boom for handling paper rolls	No RR connections
234.2L	No. Baton Rouge, La.	Consolidated Chemical Industries, Inc.	Docks for private use	None at docks	Liquid cargo only (pipeline)	KCS & IC RRs(none at dock location)
234.0L	Baton Rouge, La.	Ideal Cement Co.	Shell unloading; cement loading	None	None	No RR connections. Private docks
233.7L	Baton Rouge, La.	Kaiser Aluminum & Chemical Corp.	Bulk	None	Bulk	No RR connections
233.0L	No. Baton Rouge, La.	Allied Chemical Corp. Solvay Process Div.	Docks for loading of ships and/or barges facilities containing river water pumps for plant usage	Shelter on docks only for river water pumps & electrical gear. No warehousing on dock.	Hoses, loading liquid product; convevor & chutes, loading dry products	No RR connections to dock. Plant serv. by ICRR. Facilities for loading bulk products fm plant. No facilities for unloading
232.0L	Baton Rouge, La.	Humble Oil & Ref. Co.	Oil refinery	None	Liquid only	KCS-MP RR
231.7R	Port Allen, La.	Pure Oil Co.	Loading barges	Docking shack	2 hand-operated cranes to lift & lower hoses	No RR connections
231.6L	Baton Rouge, La.	Clifton P. Moak	Chandlers	None	None	No RR connections. Docking
231.3R		Humble Oil & Ref. Co.	Petroleum products	None	None	No RR connections
229.8L		Capitol Marine Supply Co.	Ship chandlers	None	None	No RR connections
229.2L		Mid-Stream Fuel Serv.,Inc.	Landing	None	None	No RR connections
229.0R		Greater Baton Rouge Port Commission	Port operations	2 transit sheds; warehouse	1 gantry crane; 5 mobile cranes	MP-TP-KCS-L&N, IC RRs
228.5L		Mobil Oil Co.	Bulk petroleum	None	3-6" dock lines	No RR connections. Depth of berth at mean low tide, 15'
228.1L	Baton Rouge, La.	Two Twenty Eight Terminal Service, Inc.	Tug-barge cleaning, repair, ship cleaning, barge mooring, tow make-up	None	None	No RR connections
217.0R	Gardere, La.	Scurlock Oil Co.	Crude oil loading dock	None	Pump, landing, hose	No RR connections
210.0R	Plaquemine, La.	Dow Chemical Co.	Bulk chemical terminal	None	Bulk liquid only	T&P RR
204.0R		Hercules, Inc.	Chemicals	None	Pipeline	T&P RR
203.8L	Sunshine, La.	Scurlock Oil Co.	Loading	None	None	No RR connections. Pipeline only from plant to river bank
200.5L	St. Gabriel, La.	Shell Oil Co., Inc.	Crude oil	None	None	No RR connections. Floating dock
187.8L	Geismar, La.	Cos-Mar, Inc.	Industrial chemicals-styrene monomer	Personnel shelter only	Hose to barges	ICRR. RR not to dock
187.0L		Allied Chemical Corp.	Ship & barge loading & unloading	None	Drave traveling bulk unloader 48'2"-wide x 90'3-5/8"-high plus loading & unloading hoses for barges	No RR connections
186.0L		Mobil Oil Co.	Natural gasoline & LPG barge loading	1 6x6 personnel shelter 1 8x10 personnel shelter	1-6"-300# ASA LPG loading arm 1-3"-300# ASA LPG loading arm 1-6"-150#-20' loading hose	ICRR. All pumping eqpt. located 1400' from river on east bank within plant
185.0L		Borden Chemical Co.	Barge loading	None	None	No RR connections. For liquid ammonia barges only
184.9L	Geismar, La.	Morton Chemical Corp.	Barges	None	None	No RR connections

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LOWER MISSISSIPPI REGION COMPREHENSIVE STUDY. APPENDIX D. VOLUM--ETC(U)
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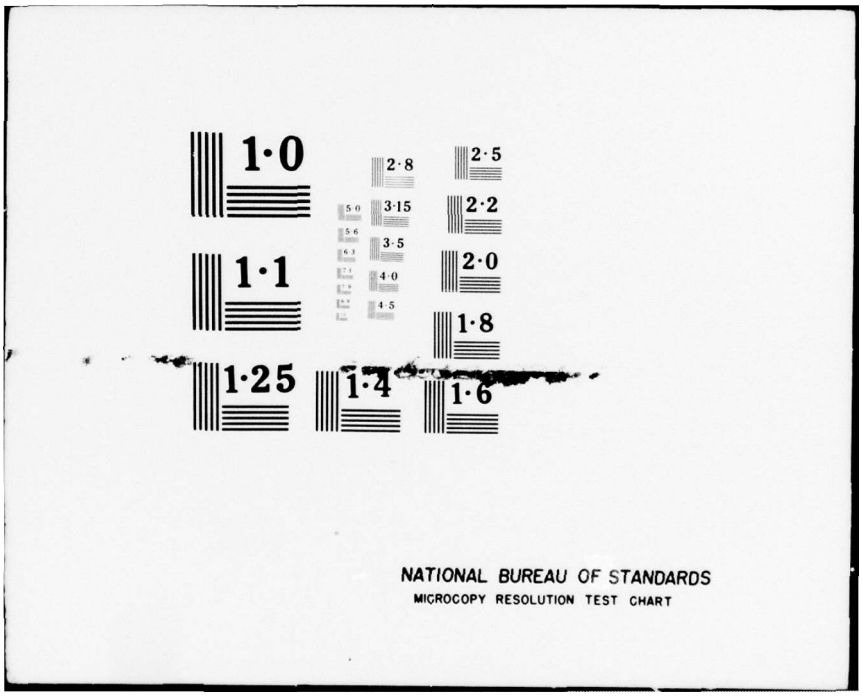
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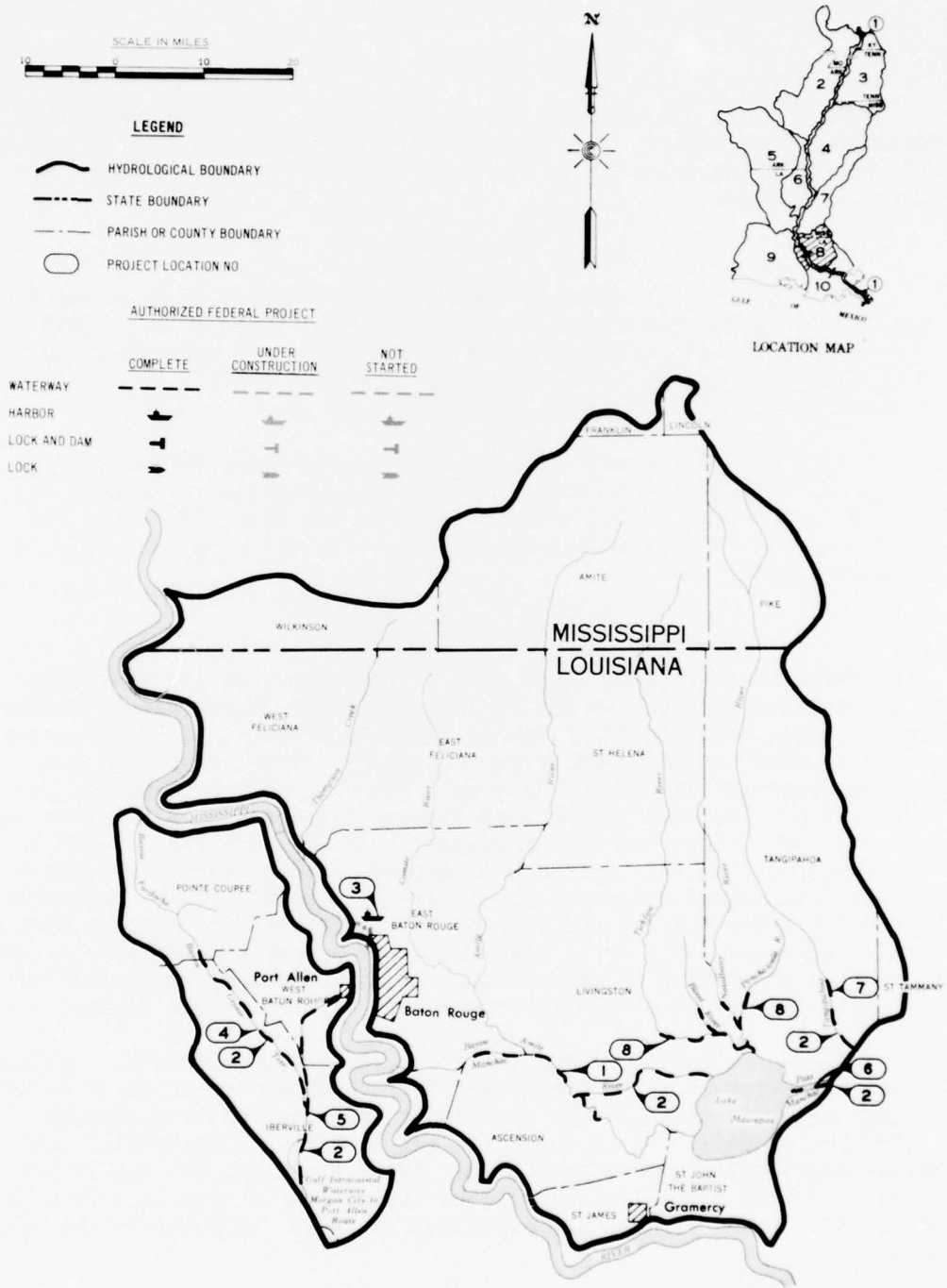
NATIONAL BUREAU OF STANDARDS
MICROCOPY RESOLUTION TEST CHART

Table 27 - List of Mississippi River Terminals, Docks, Mooring Locations, and Warehouses in WRPA 8 (continued)

AHP Mile	Location	Owner or Operator	Type of Service	Shelter or Warehousing	Cargo Handling Equipment	Remarks
185.8L	Geismar, La.	Wyandotte Chemical Corp.	Barge & ship loading, liquid chemicals	None	Liquid pipelines for chlorine, caustic, ethylene, glycol & methanol	No RR connections. 600' dock w/min. depth of 35' above m.s.l.
185.2L	Geismar, La.	Shell Chemical Co., Div. of Shell Oil Co.	Loading & unloading bulk liquids	Personnel shelter only	Loading arms & hoses	ICRR
181.4L	Marchand, La.	Humble Oil & Ref. Co.	Oil refinery	None	None	No RR connections
169.9L	Burnside, La.	Olin Mathieson Chemical Corp.	Bulk handling terminal	100,000 tons open storage	2 gantry cranes	ICRR
169.2L		Dupont de Nemours & Co.	Liquid handling for barges	None	Pipelines for unloading liquids	No RR connections. Barge dock
169.1L		Texaco, Inc.	Tanker & barge loading facility	None	Pipelines for loading liquids	No RR connections. 1 tanker dock & barge dock
168.0L		Burnside Boat Service	Tug, barge, mooring tows	None	None	No RR connections
160.3L	East bank Uncle Sam, La.	Freeport Chemical Co., Div. of Freeport Sulphur Co.	Steel-framed structure w/concrete & steel grating deck. Handles special 26,000-ton transgulf self-unloading barges hauling wet phosphate rock; 2500-ton (cargo) liquid sulphur river barges; 1000-2500-ton (cargo) phosphoric acid river barges; 2500-ton(cargo) sulphuric acid river barges	None	Conveyors; Chicsan arms & Emsco arm	No RR connections to dock. ICRR adjacent. Dock designed for handling specific marine eqpt. & cargoes
146.1L	Gramercy, La.	Colonial Sugars, Inc.	Loading sugar	None	Crawler cranes & clamshell buckets	Serv. by L&A & IC RRs. Neither line has connection with whart
145.4L		Kaiser Aluminum & Chemical Corp.	Bulk unloading	None	2 gantry cranes w/10-ton clam bkts.	L&A & IC RRs. RR spur apprx. 1500' from dock
145.1L		Kaiser Aluminum & Chemical Corp.	Liquid loading	None	A-frame with winch	L&A & IC RRs.
139.2L	Reserve, La.	So. La. Port Comm., owner. Bayside Elevator Co., operator	Receiving rail & barge bulk grain; shipping bulk grain by vessel	4,000,000-bu. bulk grain storage	Mech. car unloader; marine leg barge unloading; vessel loading berth with 3 loading booms	ICRR
138.6L	Reserve, La.	Godchaux Sugars, Inc.	Loading sugar	None	None	IC & KCS RRs
135.7L	Laplace, La.	Dupont de Nemours & Co., Inc.	Barge only	None	Pipeline only	No RR connections

PROJECT MAP INDEX
Navigation and Harbors - WRPA 8

Map Location No.	Name of Project	Agency	Year Complete	Project Uses	Description
1.	Amite River and Bayou Manchac, La.	C of E, NOD	1928	N (inactive)	Chan. 7 ft. x 60 ft. fm Lake Maurepas to Port Vincent. Clearing & snagging to L&A Railway bridge. Total length 44 mi. Cost $28,234.
2.	Aquatic Plant Control	C of E, NOD	Continuing	N, FC, F&W, R	Removal of obnoxious aquatic plant growths fm navigable streams & related waters. Total est. annual cost $5,500,000. *Includes entire State of Louisiana.*
3.	Baton Rouge Port, La. (Industrial Devils Swamp Harbor)	C of E, NOD	*1959* Continuing	N	Harbor (Devils Swamp) 12 ft.x200 ft.x5 mi. Only 2.5 mi. now const. Total est. cost $4,920,000 Fed. & $870,000 non-Fed. Total port area has 52 piers, docks, etc. with 45,535,281 tons traffic in 1970.
4.	Bayou Grosse Tete, La.	C of E, NOD	1916	N	Chan. 5 ft.x60 ft. between mi. 0 & mi. 10.5, 5 ft.x40 ft. to mi. 29. Cost $29,392. 32,200 ton mi. in 1970.
5.	Gulf Intracoastal Waterway between Apalachee Bay, Fla. & Mexican Border	C of E, NOD	61%	N	Within WRPA's 8,9,10, chan. of varying dimensions extends along coast fm E boundary of state to Sabine R., the W boundary a distance of 302 mi. fm Port Allen to Morgan City, 64 mi.; fm Plaquemine to Indian Village, 7.4 mi.; to Franklin via Franklin Canal, 5.2 mi. Cost through Jun 30, 1971, $62,688,163. 1970 traffic, 1,011,763,341 ton miles.
6.	Pass Manchac, La.	C of E	1912	N	Snagging throughout Pass. 7 mi. Cost $1,374. 117,649 ton miles in 1970.
7.	Tangipahoa River, La.	C of E, NOD	1884 (53.5 mi.) 1971	N, R, F&W	Snagging & clearing lower 53.5 mi. *complete in* 1884 at cost of $11,500. Chan. 8 ft. x 100 ft. through bar in Lake Pontchartrain at mouth of river Fed. cost $61,211; non-Fed. $29,346.
8.	Tickfaw, Natalbany, Ponchatoula, & Blood River, La.	C of E, NOD	1921	N (inactive)	*Removal* of obstruction mouth to mi. 26 in Tickfaw, mouth to mi. 4 in Blood River. 15.5 mi. total in Natalbany & Pontchatoula. Complete in 1921 for $8,115. No commerce in 1970.



LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

NAVIGATION

WRPA 8

FIGURE 43

RECREATION
AND
FISH AND WILDLIFE

General

WRPA 8 ranks third in the region in regards to human population densities. Recreation, fish and wildlife resources are limited, as the area has only two major lakes and very few small lakes. Streams are numerous, however.

Recreation

WRPA 8 has 10,327 acres of land available for outdoor recreation, including 10 acres Federally owned, 1,019 acres State owned, 6,449 acres of county and quasipublic lands, and 260 acres municipal, local government and school board lands. Additionally, there are 2,589 acres of lands in private ownership.

WRPA 8 has 73,080 acres of slack water and about 400 miles of stream suitable for recreation. Developed recreation facilities include 65 acres for camping, 122 acres for picnicking, 353 acres for playing outdoor sports and games, 92 acres for swimming, and 41 acres for boat ramps.

Fish and Wildlife

WRPA 8 water-related fish and wildlife resources include 45,000 acres of lakes between two and 40 acres in size, 73,000 acres of lakes over 40 acres in size, 400 miles of fishable streams, 2,265,000 acres of forest land, and 395,000 acres of wetland. Ponds under two acres in size are abundant in the upland areas; however, they have not as yet been inventoried. Included in the lake acreage figures are False River Lake, a Mississippi oxbow, and Lake Maurepas, a 58,000 acre lake. WRPA 8 water-related fish and wildlife facilities include State ownership of one wildlife management area. There are no Federally owned facilities. Numerous private hunting and fishing facilities are present but have not been inventoried. All areas are capable of supporting wildlife-oriented recreation consisting of nature study and photography, but primarily bird watching. Such use is nonconsumptive within certain limits.

Freshwater fishing demand totaled 2,164,000 angler-days. Habitat to satisfy stream fishing demand was only capable of meeting 44 percent of that specific demand. The demand for waterfowl hunting totaled 72,000 hunter-days. Wetland habitat for waterfowl hunting will just barely meet hunter demand in the year 2020 if present habitat is preserved. Demand for wildlife-oriented recreation totaled 280,000 user-days. All demand figures are expressed for area residents in the year 1970.

PROJECT MAP INDEX
Recreation, Fish and Wildlife Facilities - WRPA 8

Map Location No.	Name of Project	Agency	Project Use	Description
1.	False River Lake		R, F&W	High F&W rating. 2,912 acres. Mississippi River oxbow lake. Highly utilized by fishermen. Waterfowl.
3.	Lake Maurepas		R, F&W	High F&W rating. 58,240 acres. Lake & surrounding area of high value to fish and waterfowl. Heavy usage.
2.	Zemurray Wildlife Management Area	Louisiana Wild Life & Fisheries Comm.	F&W	Moderate F&W rating. 5,000-acre pine hardwood management area. No waterfowl or fishing use.

LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

RECREATION AND FISH AND WILDLIFE

WRPA 8

FIGURE 44

POWER

Steam-electric generating plants in the area at the end of 1970 consisted of two plants owned by Gulf States Utilities Company with combined capacity of 1,422.4 megawatts. These two plants generated a total of 7,606,356,000 kilowatt-hours during 1970. One plant uses cooling towers with make-up water drawn from wells. The other plant employs the once-through cooling method with the Mississippi River as the source of water.

Electric power needs of the area are served primarily through the interconnected transmission and distribution facilities of private utilities. There is industrial generation in the area in excess of 200 megawatts capacity.

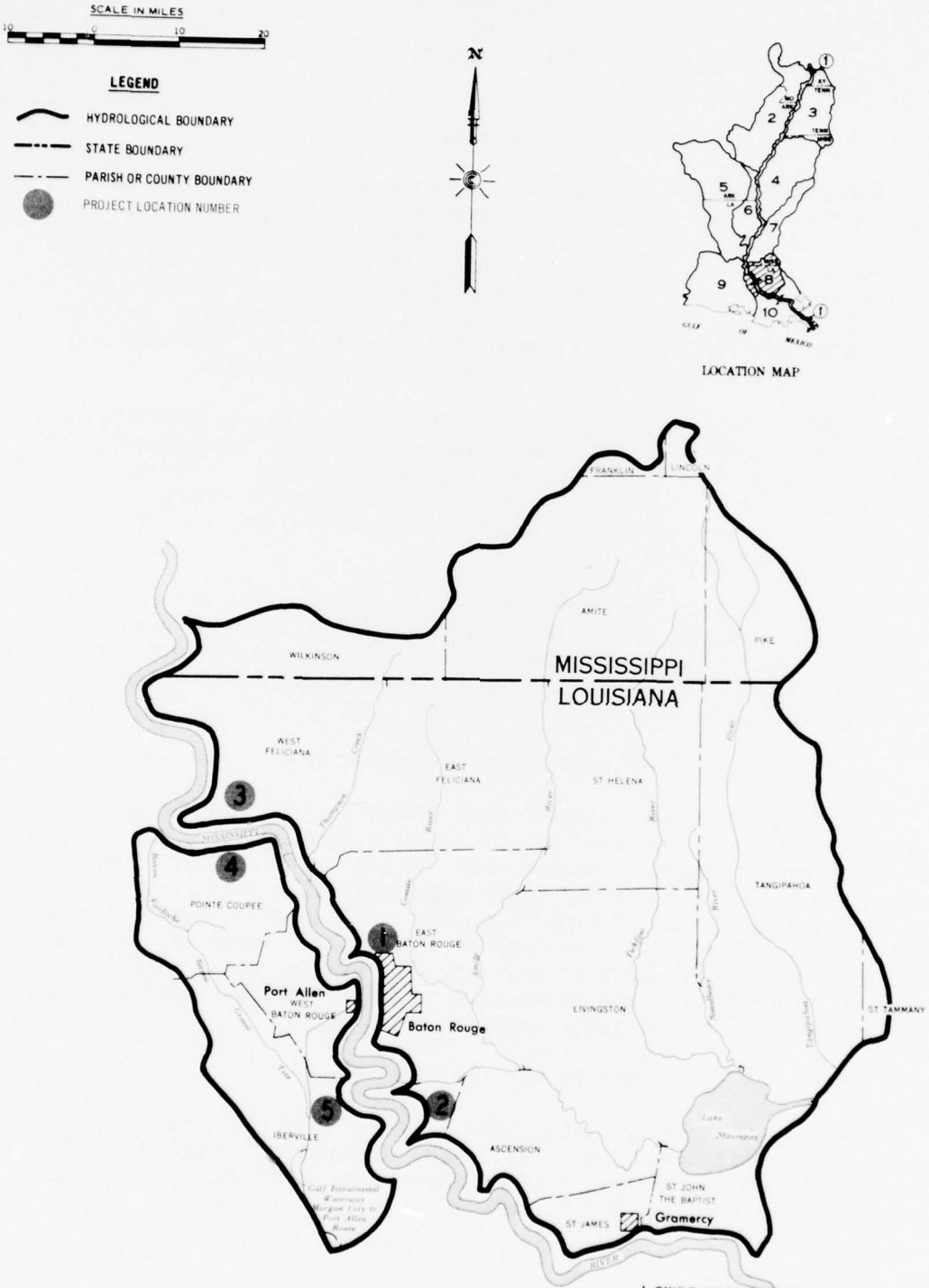
Additional capacity in excess of 3,000 megawatts will be installed in the area during the 1970-1981 period.

PROJECT MAP INDEX
Power Plants - WRPA 8

Map Location No.	Name of Plant	Owner of Plant	Type of Plant	Type of Water Supply	River	Installed Capacity (31 Dec 70) (MW)	Annual 1970 Production (1000 kwh)	Remarks
			Existing					
1.	Louisiana	Gulf States Utilities	S	Wells		428.0	2,373,245.0	
2.	Willow Glen	Gulf States Utilities	S		Mississippi	994.4	5,233,111.0	

Map Location No.	Name of Plant	Owner of Plant	Type of Plant	Type of Water Supply	River	Installed Capacity (MW)	Date	
			Planned Additions					
2.	Willow Glen No. 4	Gulf States Utilities	S		Mississippi	530.0		
2.	Willow Glen No. 5	Gulf States Utilities	S		Mississippi	530.0	September	1975
3.	River Bend No. 1	Gulf States Utilities	N		Mississippi	940.0		1979
3.	River Bend No. 2	Gulf States Utilities	N		Mississippi	940.0		1981
4.	Big Cajun	Cajun Elec. Power Coop.	S	Wells		230.0		1972
5.	Plaquemines	City of Plaquemines, La.	S	Plaquemines City Water		20.0 1/	November	1971

1/ There is an existing 10.8-MW internal combustion unit.



LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

POWER

WRPA 8

FIGURE 45

WATER SUPPLY AND SEWAGE TREATMENT

General

Water Resources Planning Area 8 covers all or part of 18 parishes and counties in southeastern Louisiana and Mississippi. Because data herein is available only on parish and county-wide bases, hydrologic boundaries have been adjusted to conform to parish and county lines. Ten Louisiana parishes and one Mississippi county fall within these boundaries and are considered in municipal, industrial, and agricultural water use and sewage treatment data collection. Parishes and counties have been further subdivided into three subareas.

In 1970, within WRPA 8, 1,575.8 MGD was required to meet the municipal, industrial, and agricultural water withdrawal requirements. Of this, 13.7 percent was supplied by groundwater sources. Groundwater withdrawals accounted for 98.9 percent of the municipal water used, 10.5 percent of the industrial water used, and 50.7 percent of the agricultural water used.

Sewage treatment was provided in 19 percent of the communities and serviced 60.4 percent of the population which utilized the area's municipal water distribution systems in 1970. The remaining 39.6 percent of the municipally serviced population utilized septic tanks or their sewage was disposed untreated.

1970 Municipal Water Supply

In 1970, municipal water systems within the WRPA serviced 85 communities, which had a combined population of 428,682 people, and varied in size from 40 people at Belle Grove, La., to almost 276,761 people in Baton Rouge, La. The average daily municipal water withdrawal within the WRPA was 55.1 MGD. During June, the peak municipal water use month in 1970, the average daily use was 62.5 MGD. This water was supplied 98.9 percent from groundwater sources. The average daily withdrawals resulted in a 128 GPCD use in areas serviced by central water systems. This compares with a national average of 166 GPCD.

1970 Industrial Water Supply

Industrial activity within WRPA 8 during 1970 required a daily average water withdrawal of 1,514.1 MGD. Groundwater supplied 10.5 percent of this withdrawal, surface sources supplied 89.3 percent and brackish water supplied 0.2 percent.

1970 Agricultural Water Supply

In addition to the municipal and industrial water withdrawals, agricultural withdrawals required 1.5 MGD for use in the irrigation of 1,056 acres and 5 MGD for use in livestock and poultry raising in 1970. Of the water used, 51 and 49 percent was supplied from groundwater and surface water, respectively.

1970 Sewage Treatment Facilities

Primary and secondary treatment was provided in 16 of the communities that utilized a municipal water distribution system in 1970. These treatment facilities provided service for 258,949 people.

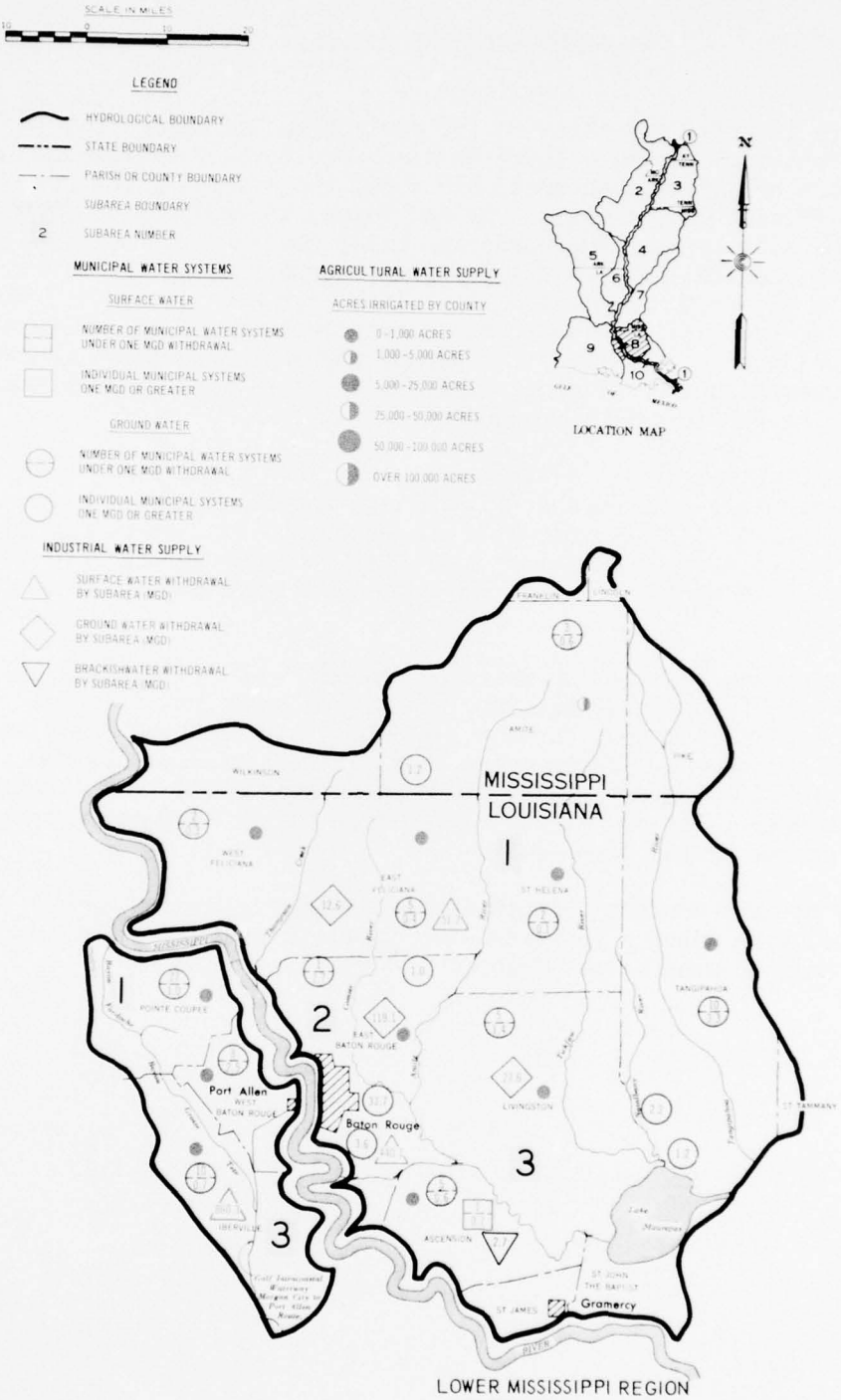
PROJECT MAP INDEX
Municipal, Industrial, and Agricultural Water Supply and Sewage Treatment Facilities - WRPA 8

Subarea / County	Population	Municipal Water Use 1/				Industrial Water Use 1/				Agricultural Water Use 1/			Sewage Treatment Facilities					
		No. systems	Withdrawal (MGD)			Withdrawal (MGD)				Withdrawal (MGD)			Secondary Treatment		Primary Treatment		No Treatment 3/	
			Ground	Surface	Total	Ground	Surface	Brackish	Total	Ground	Surface	Total	Number Plants	Population Serviced	Number Plants	Population Serviced	Number Communities	Population
8-1						12.6	51.7		64.3	3.10	3.02	6.12						
Amite	4,784	4	1.8		1.8								1	1,401				
Pointe Coupee	15,329	27	1.0		1.0													
East Feliciana	9,163	5	.4		.4								1	4,697				
West Feliciana	3,783	2	.5		.3													
St. Helena	1,129	2	.1		.1													
Tangipahoa	45,635	12	6.7		6.7								5	25,131				
8-2						119.1	440.1		559.2	.06	.04	.10						
East Baton Rouge	276,761	4	39.0		39.0												4	201,765
8-3						27.6	860.3	2.7	890.6	.14	.14	.28						
Ascension	14,071	6	.6	.7	1.3								1	4,512				
Iberville	21,885	10	.7		.7								1	1,224	1	7,739		
Livingston	24,993	5	1.4		1.4								1	6,752				
West Baton Rouge	11,151	8	2.5 2/		2.5 2/								1	5,728				
Total	428,682	86	54.5	.7	55.2	159.3	1352.1	2.7	1514.1	3.30	3.20	6.50	11	49,445	5	209,504		

1/ All figures are daily averages.

2/ Includes 0.9 MGD exported to Iberville Parish.

3/ Only denotes communities of 1,000 or greater population.



LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

MUNICIPAL, INDUSTRIAL, AND AGRICULTURAL WATER SUPPLY

WRPA 8

FIGURE 46

ARCHEOLOGY AND HISTORY

There is great diversity in the environment of WRPA 8 and its use in prehistoric times. There is also considerable difference in the amounts of information available about the archeological resources in the different environments. By and large, the uplands in southwestern Mississippi and the bordering hilly portions of Louisiana have never been studied, and few sites are on record. Along the rivers and streams in the southern portion some sites have been recorded. What evidence is now available indicates a relatively heavy agricultural use of the lowlands; and village sites around the shores of Lakes Maurepas and Pontchartrain show evidence that the lakes provided a rich source of shellfish for several thousand years.

Archeological sites identified in this WRPA total 116: 7 historic, 16 Mississippian, 20 woodland, 13 archaic, and 60 unknown. Figure 47 shows the number of sites occupied during each period by county and parish. Since some of the sites have been occupied during more than one period, the number of sites shown on the figure do not agree with those above.

East and West Feliciana Parishes contain some of the fine early houses of the European settlement, plantation homes built decades before the Civil War and, in many instances, now restored or maintained for public enjoyment. These areas show historic evidence of the problems involved in adjustment of European peoples to this strange, new environment, and how there evolved from these struggles a cultural pattern unique to the deep South.

The primary aesthetic features of southern Louisiana appear to be associated with water - the extensive inland lakes, the rivers and bayous, and the coastal marshlands.

PROJECT INDEX
Historic Sites - WRPA-8

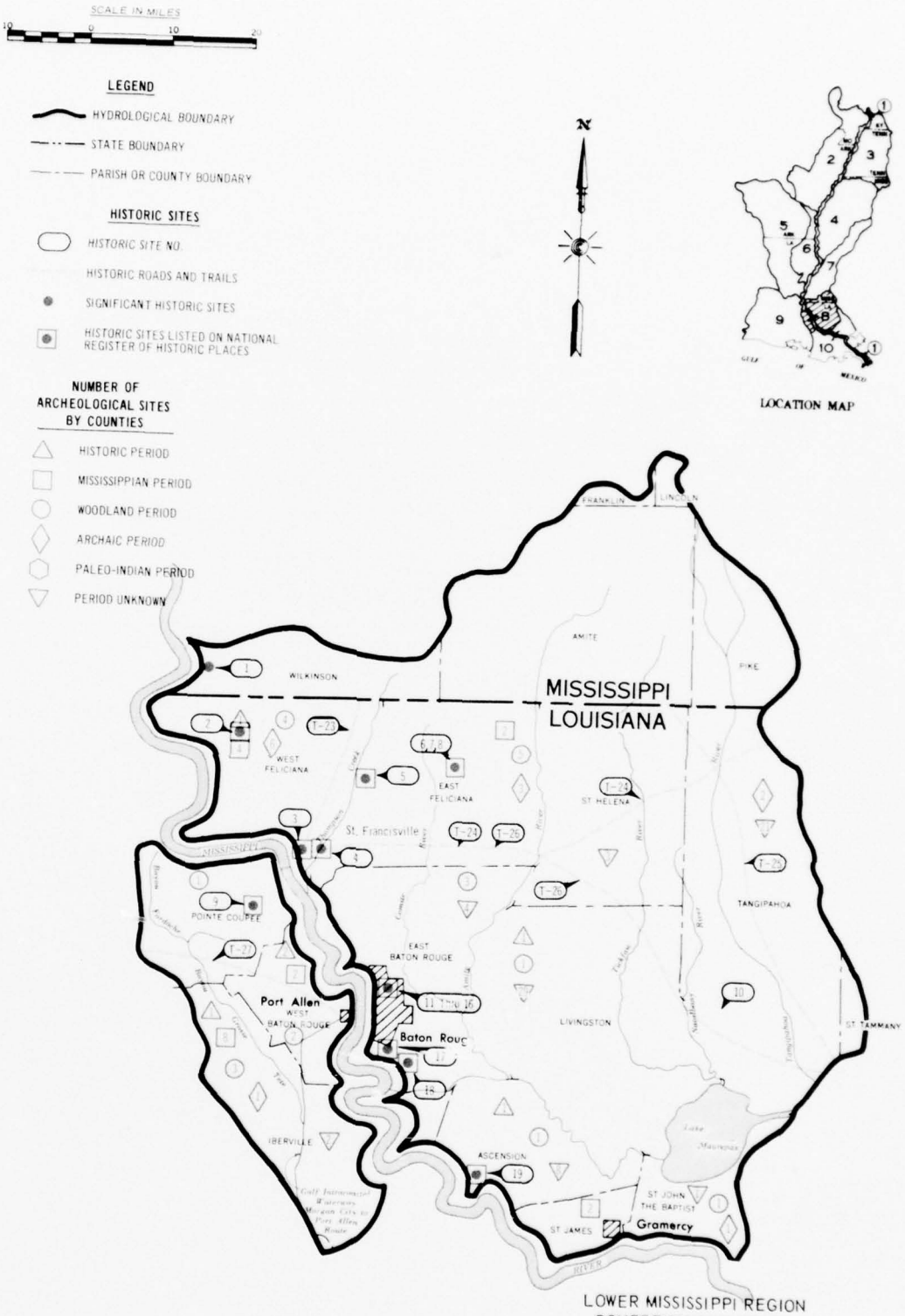
Map No.	Name		Description
5	Asphodel Plantation Cemetery East Feliciana Parish, La.	NR	Greek Revival cottage built 1820-30. Located south of Jackson on Louisiana 74.
7	Brame-Bennett House East Feliciana Parish, La.	NR	Stucco-covered brick Greek Revival house owned by a former judge and a former State legislator. Located at 227 S. Baton Rouge Street, Clinton.
8	East Feliciana Parish Courthouse East Feliciana Parish, La.	NR	Built in 1839-40 on square bounded by St. Helena, Woodville, Liberty, and Bank Streets in Clinton.
1	Fort Adams Wilkinson County, Mississippi		Early fort constructed in 1799. Prior to then was site of French missions.
10	Grace Memorial Episcopal Church Tangipahoa Parish, La.	NR	Located at 100 W. Hammond. First church built in unsettled section of present-day Hammond. Built in mid-1860's.
19	Hermitage, The Ascention Parish, Louisiana	NR	Located east of Darrow on Louisiana 942. Classical Revival, two-story house built 1812-14.
T-25	Madisonville to Natchez Road Two Parishes, Louisiana		Eighteenth century route of commerce and travel between major trade centers.
11	Magnolia Mound Plantation East Baton Rouge Parish, La.	NR	Typical Louisiana settler's house built in 1800. Located at 2161 Nicholson Drive in Baton Rouge.
T-23	Mail Route to Natchez West Feliciana Parish, La.		Eighteenth century routes of commerce and travel between major trade centers.
6	Marston House East Feliciana Parish, La.	NR	Located on Bank Street in Clinton. Used as hospital during Civil War.
4	Oakley Plantation House West Feliciana Parish, La.	NR	Located 4 miles east of St. Francisville on Louisiana 965 in Audubon Memorial State Park. Three-story house.
12	Old State Capitol East Baton Rouge Parish, La.	NR	Historic State Capitol Building in downtown Baton Rouge.
T-27	Opelousas to Baton Rouge Road Two Parishes, Louisiana		Eighteenth century trail. Route of commerce and travel.
9	Parlange Plantation House Pointe Coupee Parish, La.	NR	French Colonial plantation built in 1750. Located near Mix on Louisiana 1 and 78.
13	Pentagon Barracks East Baton Rouge Parish, La.	NR	Four, two-story brick buildings with an open space on the fifth side of a pentagon. Built 1819-23. Located at North Riverside Mall, Baton Rouge.
17	Plaquemine Lock Iberville Parish, La.	NR	Located at the confluence of Bayou Plaquemine with the Mississippi River. Historic bayou in "Evangeline" by Longfellow. Historic highest freshwater lift lock built in 1909.
14	Potts House East Baton Rouge Parish, La.	NR	Classical Revival two-story townhouse built in 1850 by Nelson Potts, a master brick mason. Located at 831 North Street, Baton Rouge.
15	Powder Magazine East Baton Rouge Parish, La.	NR	Site of 1799 British dirt fort later converted by the United States to a brick magazine. Area contains a post cemetery dating from 1819 through Civil War. Located on State Capitol Drive, Baton Rouge.

(NR--This site is on the National Register of Historic Places)
(NP--National Park)

PROJECT INDEX
Historic Sites - WRPA-8
(Continued)

Map No.	Name		Description
3	Propinquity West Feliciana Parish, La.	NR	Built in 1809 at Royal and Johnson Streets in St. Francisville. Unusual architectural features.
2	Rosebank Plantation House West Feliciana Parish, La.	NR	Plantation house built of cypress in 1790. Two-story with Doris brick columns. Located southeast of Weyanoke off Louisiana 66.
T-24	St. Francisville to Bay St. Louis Road Four Parishes, Louisiana		Eighteenth century route of commerce and travel between major trade centers.
T-26	St. Francisville to Madisonville Road Five Parishes, Louisiana		Eighteenth century route of commerce and travel between major trade centers.
18	St. Gabriel Roman Catholic Church Iberville Parish, Louisiana	NR	Possible oldest church structure in the Louisiana Purchase Territory. Built in 1760's. Located on Louisiana 75 near intersection with Louisiana 74.
16	Stewart-Dougherty House East Baton Rouge Parish, La.	NR	Distinctive mid-19th century Classical Revival structure. Served as U.S. General Hospital, 1862-63. Located at 741 North Street, Baton Rouge.

(NR--This site is on the National Register of Historic Places)
(NP--National Park)



LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

HISTORIC AND ARCHEOLOGICAL SITES

WRPA 8

FIGURE 47

WRPA 9

W R P A 9

GENERAL

Area of Study

WRPA 9 lies in southwest Louisiana and covers an area of 13,296 square miles or 13 percent of the total area in the Lower Mississippi Region. The eastern boundary is the west bank Mississippi River levee and the east Atchafalaya Basin protection levee between Morganza, Louisiana, and the Gulf of Mexico. The western and southern boundaries are formed by the divide of the Sabine River Basin and the Gulf of Mexico, respectively. The northern boundary extends westward from the Mississippi River levee at Black Hawk, Louisiana, to the Red River at mile 23, then follows the south bank of Red River to Boyce, Louisiana, and thence along the southern boundary of the Red River Basin. The principal tributaries in the study area are the Calcasieu, Mermentau, Vermilion, and Atchafalaya Rivers and Bayou Teche. The terrain of WRPA 9 consists of hills, prairies, alluvial lowlands, and coastal marshes. The most prominent topographic feature of the area is the Opelousas Escarpment, a well-defined line of bluff hills lying in a north-south direction roughly paralleling Bayou Teche.

In 1970, approxiamtely 748,000 people, about 12 percent of the Lower Mississippi Region population, resided in WRPA 9. Urban population was 58 percent of total population in 1970. Significant economic activities in the area include mineral production, petroleum and chemical processing, agriculture, commercial fishing, processing of food products, fur trapping, and service industries. In addition, the numerous lakes and streams of the area, and the vast marshland and swamps represent an enormous recreation resource. The development of oil and natural gas resources is the major contributor to the economic progress of the area.

Hydrologic Characteristics

Flow from WRPA 9 is discharged into the Gulf of Mexico through the five major streams of the area. The Calcasieu River, Mermentau River, Vermilion River and Bayou Teche have their origin in WRPA 9. The Atchafalaya River is a distributary of the Red and Mississippi Rivers. Tide influences about one-third of WRPA 9. During extremely low flows, from June to October, major hurricanes may raise the gulf as much as 12 feet above mean sea level (m.s.l.), and during the winter, strong northerly winds depress the water surface as much as two feet below m.s.l.

The Calcasieu River has its source in Vernon Parish and follows a southerly course for about 215 miles to discharge into the Gulf of Mexico through Calcasieu Lake and Calcasieu Pass. In the northern part of the basin, the Calcasieu River and its tributaries are clear, swiftly running streams. Below the latitude of Kinder, the Calcasieu River channel widens from 100 to 600 feet and deepens from three feet to as much as 45 feet as it approaches Lake Charles. In this reach, the river changes from a swiftly flowing stream to a sluggish tidal stream, typical of the bayous of southwestern Louisiana. The installation of the salt water barrier system in 1968 limited tidal influence to mile 43.1.

The principal tributaries of the Calcasieu River include Whiskey Chitto Creek, Bundick Creek, Hickory Branch, Beckwith Creek, Barnes Creek, West Fork Calcasieu River, Bayou Serpent, English Bayou and Bayou Contraband.

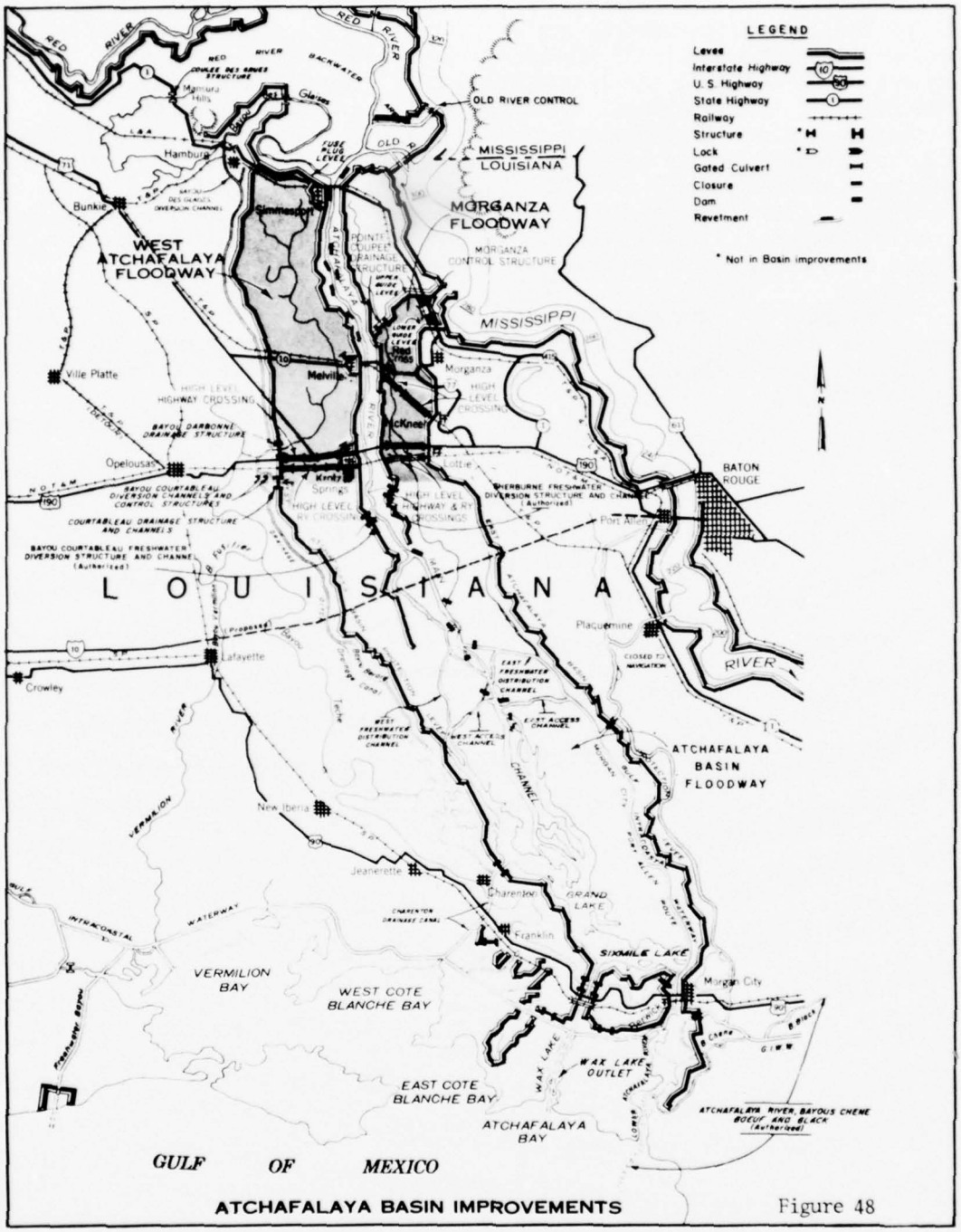
The Mermentau River is formed by the confluence of Bayou Nezpique and Bayou des Cannes and flows in a general southwesterly direction through Lake Arthur and Grand Lake and thence to the Gulf of Mexico, a distance of about 72 miles. The main Mermentau River channel differs greatly in width and depth throughout its length, except where it passes through the lakes; channel widths range from 200 to 1,200 feet and depths range from about three to 50 feet. The Mermentau River system is a series of large lakes connected to Vermilion Bay on the east and Calcasieu River on the west by navigation and flood control channels. The Mermentau River basin is a controlled system. Four control structures, Catfish Point Control Structure, Calcasieu Lock, Vermilion Lock, and Schooner Bayou Control Structure, impound winter runoff for use during the summer irrigation season. The principal tributaries of the Mermentau River are Bayous Nezpique, des Cannes, Plaquemine Brule, Queue de Tortue, and Lacassine.

The Vermilion River is formed by the confluence of Bayous Fusilier and Carencro and traverses a total distance of about 73 miles to its mouth at Vermilion Bay. It interconnects with Bayou Teche through Bayou Fusilier and Ruth Canal. Bayou Teche has its source in Bayou Courtableau at Port Barre, Louisiana, and flows in a southeasterly direction, a distance of about 125 miles, to its junction with the Lower Atchafalaya River, 10.5 miles above Morgan City. Bayou Teche is a comparatively small stream, occupying the highest part of a very large alluvial ridge. Since all local drainage is away from the stream, it functions as a flume, conveying drainage from Bayou Rapides-Bayou Cocodrie-Bayou Courtableau-West Atchafalaya Basin Protection Levee borrow pit system to the Vermilion River and Lower Bayou Teche.

The Atchafalaya River is a distributary for water from the Red and Mississippi Basins. It carries all the flow of the Red River and a substantial portion of the Mississippi River southward to the Gulf of Mexico.

Under the 1928 Flood Control Act and amendments, a central channel was dredged from about mile 55 to Grand Lake; later improvements have enlarged and extended the central channel to Stouts Pass. Flow from the Lower Atchafalaya Basin empties via Wax Lake Outlet and Lower Atchafalaya River into Atchafalaya Bay. The Atchafalaya River and central channel have a total distance of about 135 miles. The main channel varies in width from 200 to 400 feet, and in depth from 15 to 160 feet. Flow from the Mississippi River is regulated by Old River Control Structure, which was constructed to prevent the Atchafalaya River from capturing the Mississippi River.

The Gulf Intracoastal Waterway traverses WRPA 9 from east to west along the northern fringe of the coastal marshes; three locks, Calcasieu, Vermilion, and Bayou Boeuf, prevent salt water intrusion and interflow between basins.



ATCHAFALAYA BASIN IMPROVEMENTS

Figure 48

Atchafalaya Basin, Louisiana

The Atchafalaya Basin project feature of the Mississippi River and Tributaries project was authorized by the Flood Control Acts approved May 15, 1928, April 23, 1934, June 15, 1936, June 28, 1938, August 18, 1941, July 24, 1946, May 17, 1950, September 3, 1954, and October 23, 1962.

Project costs are estimated at $381 million Federal costs and $2,985,000 non-Federal costs.

Flood protection works in this project form an integral and extremely important part of the entire project for the control of floods of the lower Mississippi River. At the latitude of Old River, the design project flood on the Mississippi River has been determined to be 3 million c.f.s. The project allows one-half of the flow to continue down the main river channel, the other half to be diverted through the Morganza and West Atchafalaya Floodways and the Atchafalaya River. Floodways follow opposite sides of the Atchafalaya River to the end of the levee system along the Atchafalaya River where they merge into a single broad floodway from which flow reaches the Gulf of Mexico through Wax Lake Outlet and the lower Atchafalaya River. Portions of this project are complete. Planning is underway to develop boating access to the floodway area. *It is very important to note, however, that until* the entire floodway program is completed, the flood control plan will be only partially effective. Major features of the project are described in the following paragraphs.

West Atchafalaya Floodway

The floodway, about 6 miles in width, is located between the West Atchafalaya River levee and the West Atchafalaya Basin protection levee, and extends from Bayou des Glaises to the latitude of Krotz Springs a distance of about 32 miles. Below this point, it joins the floodwaters from the Atchafalaya River and the Morganza Floodway in the Atchafalaya Basin Floodway.

Perpetual flowage easements have been acquired by the Government over all lands and improvements in the floodway down to the latitude of Krotz Springs. These easements provide for full use of the lands for flood control purposes. Owners retain the rights to farm, improve, and inhabit the lands, and to harvest timber and minerals.

Under the project plan, it is estimated that this floodway, which has a designed capacity of 250 thousand c.f.s., will be used on an average of once in 100 years for carrying floodwaters in excess of the combined capacities of the Atchafalaya and Mississippi Rivers and the Morganza Floodway. The floodwaters will enter the floodway by over-

topping the levee at the head of the floodway and along the south bank of Bayou des Glaises. Railway and highway traffic will be carried over the floodway on high-level crossings. The floodway is complete but has not been operated to date. Important features of the floodway are:

New Orleans, Texas, and Mexico Railway High-Level Crossing. This high-level crossing, located across the floodway between Krotz Springs and Courtableau, provides means by which interrupted traffic can be maintained by the New Orleans, Texas, and Mexico Railroad; the Texas and Pacific Railway; the Missouri Pacific Railroad; and the Kansas City Southern Railway across the floodways during floods requiring operation of the West Atchafalaya Floodway. The detoured traffic will regain its own route by use of the Opelousas-Ville Platte-Bunkie Railway connection, described below. The single-track, high-level crossing comprises 31,466 linear feet of reinforced-concrete-ballaster deck-type trestle supported on piling. This crossing was completed in September 1961 at a cost of $6,547,000. The railroad is responsible for maintenance of this feature.

Opelousas-Ville Platte-Bunkie Railway Connection. This railway connection, located west of the West Atchafalaya Floodway between Opelousas and Bunkie, was constructed in lieu of providing two additional high-level crossings over the West Atchafalaya Floodway for the Texas and Pacific and the Kansas City Southern Railways. The connection consists of 16 miles of new single-track railroad between Opelousas and Ville Platte and the rehabilitation and strengthening of about 20 miles of single-track railroad between Ville Platte and Bunkie. Construction was completed in 1950 at a cost of $820,000. Maintenance of this feature is the responsibility of the Texas and Pacific Railroad Company.

U. S. Highway 190 High-Level Crossing. This crossing, located across the West Atchafalaya Floodway between Krotz Springs and Courtableau, consists of an elevated 4-lane twin-bridge highway, averaging about 29 feet above natural ground, comprising 29,385 linear feet of earth embankment and 7,500 linear feet of reinforced-concrete bridge supported by piling. During the operation of the West Atchafalaya Floodway, this crossing will provide the only usable east-west highway route between U. S. Highway 90 through Morgan City, 60 miles to the south, and U. S. Highway 84 through Natchez, Miss., 74 miles to the north. Construction was started in 1956 and opened to traffic in 1965. Cost is $8,385,900 as of June 30, 1970. The Louisiana Highway Department is responsible for maintenance.

Atchafalaya Basin Floodway

The floodway is located between protected levees approximately 15 miles apart extending from the lower limits of the Morganza and West Atchafalaya Floodways at the latitude of Krotz Springs to Morgan City and through the lower Atchafalaya River and Wax Lake Outlet to the Gulf of Mexico. The improvements necessary to this floodway are

described as the following separate features: Atchafalaya Basin Levees, West Atchafalaya Basin Protection Levee Landside Drainage Improvements, East Atchafalaya Basin Protection Levee Landside Drainage Improvements, Atchafalaya River Improvement Dredging, Atchafalaya Basin Main Channel Improvement Dredging, Raising Texas and New Orleans Railroad Bridge at Berwick, Wax Lake Outlet, East and West Calumet Floodgates, Charenton Floodgate, Berwick Lock, Bayou Sorrel Lock, Bayou Boeuf Lock and Improvements for Access, Fish and Wildlife and Recreation.

Atchafalaya Basin Levees

The levee system is designed to protect agricultural areas and towns from the normal high waters of the Mississippi-Red River backwater area, floods on the Atchafalaya River, and when necessary to divert excess floodwaters of the Mississippi and Red Rivers at the latitude of Old River through the Atchafalaya River, the Morganza, West Atchafalaya, and Atchafalaya Basin Floodways to the Gulf of Mexico, via Wax Lake Outlet and the Lower Atchafalaya River. The levees also protect valuable agricultural lands below Morgan City and west of Berwick from backwaters created by the diverted floodwater. The system includes about 449 miles of levees and currently will contain a flood of about 1,200,000 c.f.s. Work is underway to raise the floodway levees to an elevation to confine a design flow of 1,500,000 c.f.s. Bank stabilization works are being constructed from above the vicinity of Simmesport to the lower end of the main stem levee system to maintain a favorable alignment for navigation and protective levee system. Individual levee features within the Atchafalaya system include the following:

East Atchafalaya Basin Protection Levee. This levee begins at the lower end of the east guide levee of the Morganza Floodway and extends southward to and through Morgan City to Cutoff Bayou and includes the completed Bayou Boeuf and Bayou Sorrel Locks. The length of this system is 87.7 miles, including 1.3 miles of floodwall along Morgan City front and about 0.4 mile of floodwall below Morgan City. The Atchafalaya Basin Levee District, the city of Morgan City, and the St. Mary Parish Police Jury are responsible for operation and maintenance of this feature.

West Atchafalaya Basin Protection Levee. This levee begins near the town of Hamburg where it joins the Bayou des Glaises fuseplug levee. The levee extends in a south and southeasterly direction to the Wax Lake Outlet at the latitude of the East and West Calumet Floodgates and thence eastward to and through Berwick to the Gulf Intracoastal Waterway below. It includes 1 mile of floodwall along the front of the town of Berwick. It contains the completed Bayou Darbonne Drainage Structure, and the Bayou Courtableau Drainage Structure, the Charenton Floodgate, and the Berwick Lock. The Red River, Atchafalaya, and Bayou Boeuf Levee District; the Atchafalaya Basin Levee District; the town of Berwick, and the St. Mary Parish Police Jury are responsible for operation and maintenance of this feature.

East Atchafalaya River Levee. This levee extends from the junction of the Atchafalaya, Old, and Red Rivers along the east bank of the Atchafalaya River to Alabama Bayou, a distance of about 51 miles. It is complete except for minor deficiencies at scattered locations totaling approximately 3 miles. The Atchafalaya Basin Levee District is responsible for maintenance of this feature.

West Atchafalaya River Levee. This levee extends southward from Bayou des Glaises levee at Simmesport along the west bank of the Atchafalaya River and Butte La Rose to Bayou Garofier, a distance of about 61 miles. It also includes the Simmesport ring levee 1.6 miles in length, and its drainage outlet; Brushy Bayou Drainage Structure; Melville ring levee, 4.1 miles in length, and its drainage structures; and Krotz Springs ring levee, 1.7 miles in length. The total length of levee in this system is about 68 miles. It is essentially complete. About 2 miles of levee remain to be brought to grade and section. The Red River, Atchafalaya, and Bayou Boeuf Levee District is responsible for maintenance of this levee line to the Bayou Courtableau crossing below Krotz Springs. The Atchafalaya Basin Levee District is responsible for maintenance of the levee between Bayou Courtableau and Bayou Garofier.

Bayou des Glaises Fuseplug Levee. This levee extends from the town of Simmesport west and along the south bank of Bayou des Glaises to the West Atchafalaya Basin protection levees near Hamburg, a distance of approximately 8 miles. This levee protects the lands in the West Atchafalaya Floodway from floodwaters in the Mississippi-Red River backwater area until stages requiring the use of the West Atchafalaya Floodway are reached. Floodwaters will then enter the floodway by overtopping the levee. This levee has been completed. The Red River, Atchafalaya, and Bayou Boeuf Levee District is responsible for maintenance of this feature.

Mansura Hills to Hamburg Levee. This feature extends from the Mansura Hills, along the north bank of Bayou des Glaises to the State-owned drainage structure in Bayou des Glaises (Bordelonville Floodgate), across the structure and southward to the junction of the West Atchafalaya Basin protection levee and the Bayou des Glaises fuseplug levee near the town of Hamburg. This levee serves as a protection for the area west of the floodways and west of Marksville from the Mississippi-Red Rivers backwaters. The 20.1-mile levee has been completed. The Red River, Atchafalaya, and Bayou Boeuf Levee District is responsible for maintenance of this feature.

Levees West of Berwick. This system includes approximately 58 miles of intermittent levees tying into high ground. They have been designed to protect the cultivatable lands along the Teche and Sale' ridges from the backwaters created by diversion of floodwaters from the Mississippi and Red Rivers through the floodways, the Wax Lake Outlet, and the lower Atchafalaya River.

The levee system begins at the lower end of the West Atchafalaya Basin protection levee below Berwick and extends westward generally along the north bank of the Intracoastal Waterway and east bank of Wax Lake Outlet, to the completed East Calumet Floodgate. The levee continues on the opposite side of Wax Lake Outlet at the completed West Calumet Floodgate following a southerly and westerly direction along Wax Lake Outlet and the north bank of the Gulf Intracoastal Waterway to high ground at Bayou Sale', then following along an irregular alignment around the Bayou Sale' ridge below the Intracoastal Waterway and northward above the Intracoastal Waterway to the Charenton Drainage Canal near Baldwin.

Drainage for the enclosed area will be afforded through construction of about 38 miles of canals, three drainage structures, 20 gated culverts, an inverted siphon, and pumping stations. Approximately 29 miles of levee remain to be completed to design grade and section.

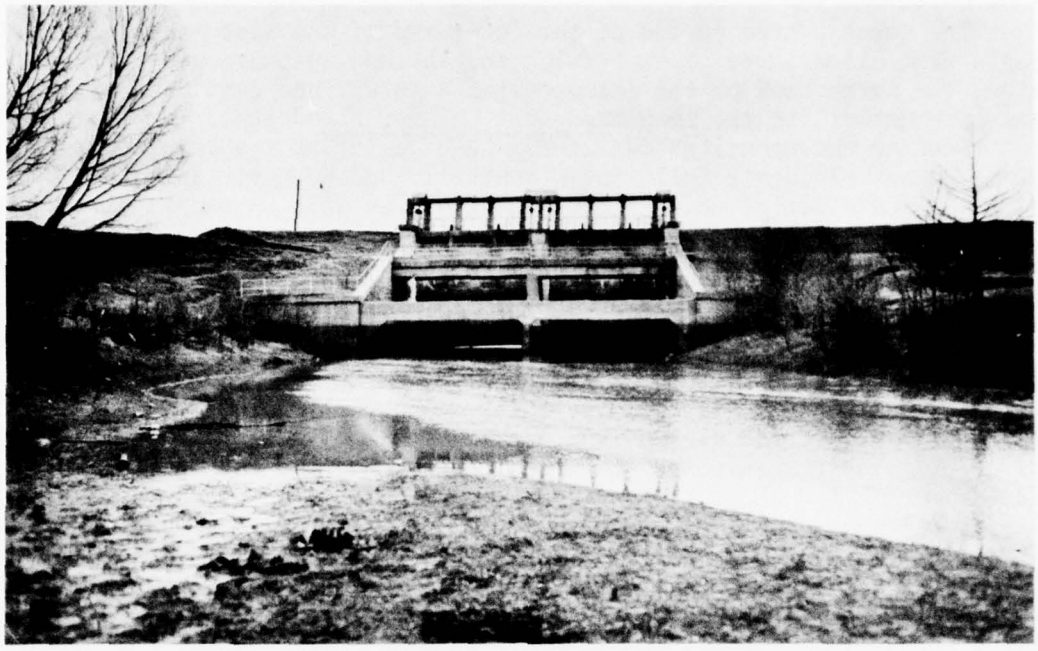
The Maryland (132 c.f.s. capacity), Gordy (230 c.f.s. capacity), Tiger Island (37 c.f.s. capacity), Ellerslie (136 c.f.s. capacity), Franklin (144 c.f.s. capacity), Bayou Yokely, Bayou Yokely Enlargement (580 c.f.s. capacity), Wax Lake East (1,000 c.f.s. capacity), Centerville (330 c.f.s. capacity), and North Bend (50 c.f.s. capacity) Pumping Stations, 19 of the gated culverts, and the Wax Lake East and Wax Lake West Drainage Structures are complete. The Wax Lake East inverted siphon was completed in August 1963. The Wax Lake West Pumping Station (500 c.f.s. capacity) was completed in April 1965. Detail design for enlargement of the Franklin Pumping Station is underway.

This project feature is maintained by Berwick and the St. Mary Parish Police Jury.

West Atchafalaya Basin Protection Levee Landside Drainage Improvements

Drainage intercepted by the West Atchafalaya Basin protection levee is provided for under this project by enlarging the landside borrow pit and natural streams in the area. Features of these improvements are as follows:

Bayou des Glaises Diversion Channel and Improvement of State Canal and Bayou Roseau from Mill Bayou to the Bayou des Glaises Diversion Channel. The Bayou des Glaises Diversion Channel, completed in 1939, connects Bayou des Glaises with the landside borrow pit of the West Atchafalaya Basin protection levee. This channel will operate at full capacity when the State-owned floodgate on Bayou des Glaises near Bordelonville is closed. Other landside drainage intercepted by the Mansura Hills to Hamburg levee is taken off by the enlarged channel of State Canal and Bayou Roseau between Mill Bayou and the main diversion channel which was completed in 1943. The cost of these improvements was $228,000.



Bayou des Glaises culvert serves as an outlet for passage of water accumulated within the leveed Bayou des Glaises loop area and the floodway side of the levee.

Bayou des Glaises Culvert. This culvert consists of a 72-inch corrugated pipe with flap gate and concrete stilling basin. The culvert passes through the old Bayou des Glaises levee connecting the floodway side borrow pit of the Bordelonville-Hamburg levee with Bayou des Glaises proper, and provides an outlet for the water accumulating within the Bayou des Glaises loop. It was completed in 1939 at a cost of $26,000.

Borrow Pit Enlargement between Hamburg and Courtableau. Enlargement of inadequate sections of the borrow pits was completed in 1939 at a cost of $345,000.

Bayou Darbonne Drainage Structure. This structure, located in the West Atchafalaya Basin protection levee at the Bayou Darbonne crossing, is a reinforced-concrete box culvert 10 feet by 10 feet by 265 feet long, with a manually controlled gate. It is used during low stages to permit flow, when possible, from the West Atchafalaya Floodway to Bayou Teche through Bayou Courtableau and thereby provides water frequently needed for irrigation purposes. During flood stages, floodwaters in the borrow pit pass through the structure to the floodway. The structure was completed in 1941 at a cost of $60,000 and is operated by the U. S. Army Corps of Engineers.

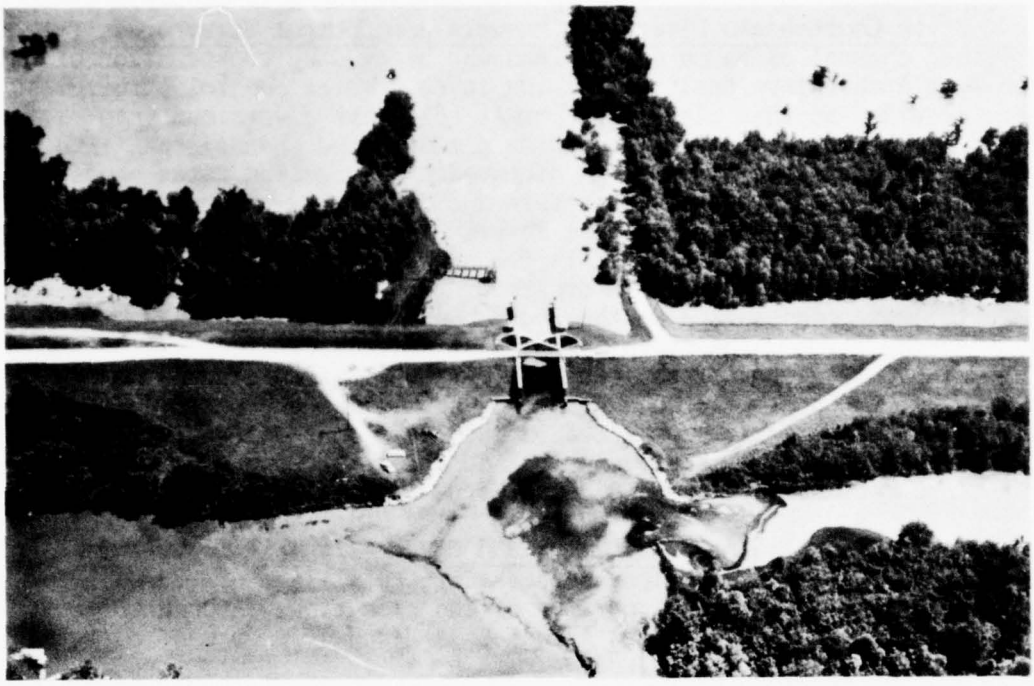
Bayou Courtableau Diversion Channels and Control Structure. The original channel of Bayou Courtableau was blocked by construction of the West Atchafalaya Basin protection levee. Water control structures were provided at this closure to permit selective diversions into Bayou Teche, into the landside borrow pit drainage channel, and into the West Atchafalaya Floodway as dictated by irrigation water needs and drainage runoff flows. To retain and divert low-water flow into Bayou Teche at Port Barre for use in rice irrigation in the Teche and Vermilion River Basins where it is frequently needed, wide, shallow, reinforced-concrete weirs with crests of 18.0 feet above mean sea level (m.s.l.) were constructed on the south bank of Bayou Courtableau just west of the levee. The width of the east weir is 482 feet and of the west weir, 517 feet. Floodflows pass over the weirs into the borrow pit below, through outlet channels excavated below the weirs. The diversion channels were completed in 1939 at a cost of $36,700, and the structures were completed in 1942 at a cost of $14,500. The structures are operated by the U. S. Army Corps of Engineers.

Courtableau Drainage Structure and Channels. This feature is located approximately 2 miles southeast of the village of Courtableau and is designed to divert a portion of the floodflows through the west protection levee into the West Atchafalaya Floodway. It was completed in 1956 at a cost of $1,400,000.

Bayou Berard Drainage Canal. This canal extends from the landside borrow pit in the vicinity of Cypremort, about 3 miles below Henderson, to the head of Lake Catahoula, a distance of 7 miles. Enlarged twice, it now has a bottom width of 65 feet, 15 feet below m.s.l. Flow through this enlarged channel supplements the runoff through the borrow pit. It was completed in 1940 at a cost of $277,000.

Channel Improvement from Cypremort to Dauterive. This feature extends in a southerly direction in the landside borrow pit, commencing about 1 mile south of Cypremort and ending opposite the head of Lake Dauterive, a distance of 14.3 miles. The borrow pit was enlarged, and Bayou Mercier and two distributaries of Lake Catahoula were improved. The channel and the Bayou Berard Drainage Canal are supplemental improvements. The channel was completed in 1941 at a cost of $791,000.

Charenton Drainage Canal. This drainage connection extends from the Charenton Floodgate to Bayou Teche and thence along Bayou Teche and a new land cut to West Cote Blanche Bay, an arm of the Gulf of Mexico. It provides an outlet for the West Atchafalaya Basin protection levee borrow pit. The canal has a bottom width of 75 feet, 30 feet below m.s.l., and a design discharge capacity of approximately 22,000 c.f.s. This improvement required the construction of one railroad bridge and three highway bridges. It was completed in 1948 at a cost of $2,955,000.



Charenton Floodgate regulates flows between Bayou Teche and the Atchafalaya Basin Floodway and affords a navigation connection between the Atchafalaya River and Bayou Teche .

East Atchafayala Basin Protection Levee Landside Drainage Improvements

After closure of the Bayou Pigeon navigation connection and during the construction of the Bayou Sorrel Lock, drainage intercepted by the East Atchafalaya Basin protection levee was provided for by enlarging portions of the borrow pit and nearby streams. These improvements serve as a navigation route between Bayou Sorrel Lock and the Intracoastal Waterway. Although about 22 miles longer than the project route between Port Allen and Morgan City, the landside route affords easier navigation in times of flood and swift currents. During times of low rainfall east of the levee, fresh water may be passed through Bayou Sorrel and Port Allen locks into the channels east of the levee.

For a description of drainage improvements of this feature, see WRPA 10.

Atchafalaya River Improvement Dredging

Improvement dredging of the leveed channel of the Atchafalaya River and of its outlets is provided under this feature. Work includes the enlargement of the openings of existing railroad and highway bridges across the Atchafalaya River, and such alterations of existing crossings of this river as are deemed necessary to the execution of the plan. Other restricted sections of the channel are to be enlarged to increase the floodflows of the Atchafalaya River. The improvement extends from the confluence of the Red, Old, and Atchafalaya Rivers to Alabama Bayou, mile 57. All work has been completed, unless at a later date it is found that additional improvements are required. Construction costs are shown in table 28.

Table 28 - Construction Cost,[1/] Atchafalaya River Improvement Dredging

Item	Amount
	$
Dredging	1,080,000
Simmesport highway and railroad bridge 897-foot extension and 3 deep piers (1937)	986,000
NOT&M Railway bridge at Krotz Springs:	
1,270-foot extension and 2 deep piers (1937)	824,000
Fascine mattresses	68,000
Raising entire bridge 6 feet (1953)	370,000
T&P Railway bridge at Melville extension (1952)	1,250,000
Total for feature	4,578,000

1/ The nonconstruction costs for the improvement are included in the overall project cost.

Atchafalaya Basin Main Channel Improvement Dredging

The flood-carrying capacity of the Atchafalaya is being increased by dredging a continuous main channel through the swamps of the central portion of the basin. The dredging extends from the Atchafalaya River at Alabama Bayou to the main body of Grand Lake near Morgan City. Completion of this feature is scheduled for 1979. Estimated costs for this feature are shown in Table 29.

Table 29 - Estimated Costs, Atchafalaya Basin Main Channel Improvement Dredging

Item	Amount (Construction Cost)
	$
Dredging (completed)	45,469,000
Dredging (future).	80,129,000
Pipeline and utilities (completed)	913,700
Pipeline and utilities (future).	665,300
Total for feature	127,177,000

Raising Texas and New Orleans (Southern Pacific) Railroad Bridge at Berwick

The diversion of additional floodwaters through the Atchafalaya Basin, endangering stability of this railroad bridge, necessitated raising the bridge 4 feet. Work was completed in 1942 at a cost of $360,000. Further modification of this bridge for navigation has been directed under the Truman Hobbs Act.

Wax Lake Outlet

With a capacity of 270,000 c.f.s., this outlet diverts floodwaters out of the Atchafalaya Basin to reduce flood heights and to protect, during extreme floods, the cultivable lands along the Teche and Boeuf ridges and vital transcontinental routes of communication at the latitude of Morgan City. This dredged channel, located about 10 miles west of Berwick, extends from Six Mile Lake through the Teche ridge and Wax Lake into Atchafalaya Bay, a distance of about 15.7 miles.

The channel has a bottom width of 300 feet from Six Mile Lake to a point one-half mile below Bayou Teche and of 400 feet below that point and a uniform depth of 45 feet below m.s.l. The spoil from the channel dredging was used to construct guide levees extending from the West Atchafalaya Basin protection levee to the Intracoastal Waterway on each side of the outlet.

The East and West Calumet Floodgates, described in the following paragraph, were constructed where the guide levees cross Bayou Teche to allow continued navigation and to regulate floodflows to some extent.

New bridges were constructed to carry U. S. Highway 90 and the Southern Pacific lines over the dredged channel.

This improvement was completed in 1942 at a cost of $7,122,000, and is maintained by the U. S. Army Corps of Engineers except for the bridges which are maintained by their owners.

East and West Calumet Floodgates

These floodgates are located in the East and West Wax Lake Outlet guide levees where the levees cross Bayou Teche. Each floodgate is a reinforced-concrete structure 161 feet long with a 45-foot clear width, a sill 9.8 feet below m.s.l., and with steel sector gates.

The floodgates will allow navigation in Bayou Teche, and will to some extent regulate floodflows. These gates were completed in 1950 at a cost of $1,320,000. Operation and maintenance are the responsibility of the U. S. Army Corps of Engineers.

Charenton Floodgate

This floodgate is located in the West Atchafalaya Basin protection levee, about 1 mile north of Charenton. It is a reinforced-concrete structure, 175 feet long with a clear width of 45 feet, a bottom 10.8 feet below m.s.l., and with steel sector gates.

The floodgate affords a navigation connection between Grand Lake and the West Atchafalaya Basin protection levee borrow pit and Charenton Drainage Canal. It also regulates flows between Bayou Teche and the Atchafalaya Basin Floodway. The structure was completed in 1948 at a cost of $298,000.

Modification of the floodgate is planned to accommodate the 1963 stabilized flow line. This modification will cost $5,500. In 1951, a removable bridge with a low steel elevation of 20.7 feet, m.s.l., was constructed across the structure. Charenton Floodgate is operated and maintained by the U. S. Army Corps of Engineers.

Berwick Lock

Located in the west protection levee near its crossing of the lower Atchafalaya River about 2 miles north of the town of Berwick, this lock is a reinforced-concrete structure 45 feet wide, with sills 9.8 feet below m.s.l., and a usable length of 300 feet between steel sector gates. It affords a navigation passage through the levee and permits navigation up the lower Atchafalaya River to Patterson and to Bayou Teche. The lock was completed in 1951 at a cost of $2,100,000 and is maintained by the U. S. Army Corps of Engineers.

Bayou Sorrel Lock

Located in the East Atchafalaya Basin protection levee at its intersection with the Morgan City-Port Allen Route to the Gulf Intracoastal Waterway, about 15 miles below Plaquemine, this lock provides a navigation connection through the levee. The lock consists of two reinforced-concrete gate bays equipped with steel sector gates and connected with an earth chamber having a timber guide wall on one side. The usable length is 797 feet, the clear width is 56 feet, and the depth over the sills is 15 feet at mean low water.

The navigation route between Port Allen and Morgan City through the lock is about 22 miles shorter than the landside waterway. The lock was completed June 1951, at a cost of $4,700,948, and is operated and maintained by the U. S. Army Corps of Engineers. The lock is to be modified at a cost of $13,400 to accommodate the 1963 stabilized flow line.

Bayou Boeuf Lock

This lock is located in the East Atchafalaya Basin protection levee below Morgan City at a point where it crosses Bayou Boeuf and the Intracoastal Waterway. It consists of two reinforced-concrete gate bays equipped with steel sector gates connected by an earth chamber which has a timber guide wall on one side. The lock has a length of 1,156 feet, a clear width of 75 feet, and a depth over sills of 13 feet at mean low gulf level.

This improvement is necessary to provide for navigation through the levee which protects the areas and communities east of Morgan City from the floodwaters from the Atchafalaya Basin. The lock was opened to navigation in September 1954 and dredging of all approach channels together with other improvements was completed early in 1955. The lock, excluding approach channels, was completed at a cost of about $2,754,000. It is operated and maintained by the U. S. Army Corps of Engineers.

Improvements for Access, Fish and Wildlife, and Recreation

A program has been initiated to minimize disruption to basin access and damage to fish and wildlife resources, occasioned by the construction of the flood control improvements. A recreation master plan is being developed by the Corps of Engineers. Under this plan, 22 recreation, parking, and launching areas will be constructed. These areas will be managed and maintained by local interests. In addition to the above, positive measures are being taken on all hydraulic dredging done in the basin to ensure that all spoil is confined to designated areas, and that all liquid effluent from the dredging process is returned to the main channel.

East and West Access Channels. This feature consists of channels, 9 feet by 80 feet, which provide navigable connections between the East and West Atchafalaya guide levees. They are used by both commercial and recreational craft and permit basin-wide access to and from the main channel. An additional function of these channels is to distribute fresh water to the overbank areas which they traverse.

East and West Freshwater Distribution Channels. These channels are being maintained to distribute fresh water on the east and west sides of the Atchafalaya Basin during seasons of low water on the Atchafalaya River system. The intermittent overflow from these channels is beneficial to fishing and hunting activities in the area.

East and West Freshwater Diversion Structures. These structures will be constructed in the Atchafalaya River levees at Sherburne and the vicinity of Bayou Courtableau to supply fresh water from the Atchafalaya River to the marshlands on both the east and west sides of the river. Each structure will consist of two 10-foot by 10-foot gated culverts.

Water introduced by gravity flow into the Ramah area of the Atchafalaya Basin Floodway, east of the Atchafalaya River, will be distributed by the structure at Sherburne through Big Alabama Bayou, Bayou des Glaises, and connecting channels. Water introduced into the Henderson area of the Atchafalaya Basin Floodway, west of the Atchafalaya River, will be distributed by the Bayou Courtableau structure through Little Fordoche Bayou and connecting swamp channels.

Spoil Retention Dikes. A system of dikes, ditches, and weirs is being constructed to prevent damage to high value habitat in the Atchafalaya Basin from the hydraulic dredging being done to enlarge the main channel. The dikes serve to confine spoil material to carefully chosen areas, while the ditches and weirs return spillwater from the dredging process to the main channel. The system will thus preclude the incursion of any sediments into existing off-channel open water areas and hence minimize alteration of the basin's unique environment.

In addition, an existing opening in the main channel bank at Pat's Throat will be maintained. Openings at Jakes Bayou and "The Crevasse" will also be maintained if experience shows that this is practicable.

Avoyelles-St. Landry Watershed, Louisiana

Located in Avoyelles, St. Landry, and Rapides Parishes, La., this 247,000-acre project was authorized in 1971. The main project features are: (1) 102,300 acres of land treatment measures costing an estimated $6,880,500 and (2) 250 miles of channel improvement. The total estimated project costs are $10,478,864 ($2,969,785 Federal and $7,509,079 non-Federal). Floodplain lands benefited are 177,250 acres. Total annual damages prevented are $193,640; total annual benefits are $473,235. The benefit-cost ratio is 2.1 to 1.

Bayou Blue Watershed, Louisiana

Located in Allen and Jefferson Davis Parishes, La., this 81,840-acre project was authorized in 1962. The main project features are: (1) 33,480 acres of land treatment measures costing an estimated $1,002,128, and (2) 36 miles of channel improvement. The estimated project costs are $1,564,042 ($392,250 Federal and $1,171,792 non-Federal). Floodplain lands benefited are 14,000 acres. Total annual damages prevented are $2,788; total annual benefits are $90,336. The benefit-cost ratio is 2.0 to 1. The project is complete.

Bayou Boeuf Watershed, Louisiana

Authorized in 1965, this 187,974-acre project is located in Rapides Parish, La. The main project features are: (1) 91,303 acres of land treatment measures costing an estimated $2,313,758, (2) two multipurpose reservoirs for irrigation and recreation; (3) four water control structures; (4) channel improvement for irrigation canal; and (5) recreation facilities. Drainage areas for the two sites are broken down as follows: (1) Site 1, 34.9 square miles of drainage area with 25,000 acre-feet of storage (800 acre-feet sediment, 4,310 acre-feet recreation, and 19,810 acre-feet irrigation). The recreation pool is 1,290 acres. (2) Site 2, 23.5 square miles of drainage area with 25,000 acre-feet of storage (570 acre-feet sediment, 6,550 acre-feet recreation, and 17,880 acre-feet irrigation. The recreation pool on Site 2 is 1,125 acres. Benefited lands are 23,715 acres.

Bayou Choupique, Louisiana

The Bayou Choupique project, authorized under Section 205 of the Flood Control Act of 1948, consists of 2.7 miles of channel enlargement, 2.5 miles of diversion channel between the Gulf Intracoastal Waterway and mile 7.5, and the construction of an automatic drainage gate into the bayou through the diversion channel.

This project was completed in 1954 at a cost of $129,930. Cumulative benefits from flood damage prevented are estimated at $338,000. The project provides protection to approximately 20,000 acres.

Bayou Cocodrie and Tributaries, Louisiana

The Bayou Cocodrie and Tributaries project was authorized by Section 3 of Flood Control Act of August 18, 1941, House Document 359, 77th Congress, 1st Session, and modification of the project was recommended in Comprehensive Review of MR&T Project Report dated December 1959.

This project provides for construction of a 59.8-mile diversion channel from Bayou Rapides west of Alexandria to Bayou Courtableau above Washington; clearing and snagging of 2.2 miles of Bayou Boeuf; enlargement of 14.9 miles of Bayou Boeuf; enlargement of 15.3 miles of Bayou Cocodrie; and clearing and snagging of 10.0 miles of Bayou Cocodrie. Gated control structures are located at the head of the diversion channel and in Bayou Lamourie. A fixed-crest weir near Lecompte ensures equitable low-water flow in Bayou Boeuf.

This project has been modified to provide for the construction of a diversion channel from the lower end of the existing diversion channel near Washington to the Bayou Courtableau Drainage Structure to augment the capacity of Bayou Courtableau; and for the construction of a three-barrel drainage structure adjacent to the Bayou Courtableau Drainage Structure to provide for diversion of the increased flows generated by the new channel into the floodway.

The project is complete except for the enlargement of 13.5 miles of upper Bayou Boeuf and the channel improvement of 25.3 miles of Bayou Cocodrie. This work is being delayed pending solution of a flood problem at and below the lower end of the diversion channel which would be aggravated by the improvements on Bayous Boeuf and Cocodrie.

The estimated total Federal cost of the project is $7,490,000. The Federal cost for the completed portion as authorized in 1941 is $3,423,700. The cumulative benefits consisting of flood damages prevented are estimated at $1,962,000.

Bayou Rapides, Louisiana

The Bayou Rapides project, authorized under Section 205 of the Flood Control Act of 1948, consists of 22.6 miles of snagging and clearing and chemical treatment of the stumps. Work was completed in December 1951 at a cost of $95,179. Cumulative benefits from flood damage prevented are estimated of $157,000. The project provides protection to 300 acres of cultivated land and 3,000 acres of timberland.

Bayou Rapides Watershed, Louisiana

Authorized in 1961, this 96,970-acre project is located in Rapides Parish, La. The main project features are: (1) 17,380 acres of land treatment measures costing an estimated $1,991,080; (2) one multipurpose reservoir for irrigation and recreation; (3) 20 miles of irrigation distribution system; and (4) recreation facilities. There are 40.75 square miles of drainage area with 25,000 acre-feet of storage (652 acre-feet sediment, 5,775 acre-feet recreation, 18,573 acre-feet irrigation). The recreation pool is 1,030 acres. The estimated project costs are $5,162,298 ($1,854,922 Federal and $3,307,376 non-Federal). Lands benefited are 9,760 acres. Total annual benefits are $359,006. The benefit-cost ratio is 2.3 to 1. The project is complete.

Bear Creek Watershed, Louisiana

Located in Allen and Beauregard Parishes, La., this 20,400-acre project was authorized in 1962. The main project features are (1) 12,500 acres of land treatment measures costing an estimated $221,770; (2) three floodwater retarding dams; and (3) 13 miles of channel improvement. There are 170 acre-feet of sediment storage; 2056 acre-feet of floodwater with a normal pool area of 109 acres. The total estimated project costs are $606,334 ($316,775 Federal and $289,559 non-Federal). Floodplain lands benefited are 6,550 acres. Total annual damages prevented are $16,134; total annual benefits are $42,606. The benefit-cost ratio is 1.5 to 1. The project is complete.

Cameron-Creole Watershed, Louisiana

Located in Cameron Parish, La., this 113,000-acre project was authorized in 1969. The main project features are: (1) 62,600 acres of land treatment measures costing an estimated $234,130; (2) 35 miles of channel improvement; (3) three water control structures; and (4) 19 miles of levee. The estimated project costs are $2,181,662 ($1,579,957 Federal and $601,705 non-Federal). Floodplain lands benefited are 113,000 acres. Total annual damages prevented are $67,272; total annual benefits are $195.766. The benefit-cost ratio is 2.1 to 1.

Chatlin Lake Canal Watershed, Louisiana

Located in Avoyelles and Rapides Parishes, La., this 99,500-acre project was authorized in 1969. The main project features are: (1) 62,845 acres of land treatment measures costing an estimated $5,711,765, and (2) 135 miles of channel improvement. The total estimated project costs are $7,957,185 ($1,629,920 Federal and $6,327,265 non-Federal). Floodplain lands benefited are 60,000 acres. Total annual damages prevented are $112,840; total annual benefits are $331,528. The benefit-cost ratio is 3.2 to 1.

Cocodrie-Grand Louis Watershed, Louisiana

Located in Evangeline and St. Landry Parishes, La., this 132,000-acre project was authorized in 1966. The main project features are: (1) 51,835 acres of land treatment measures costing $773,299, and (2) 83 miles of channel improvement. The total estimated project costs are $2,066,019 ($967,439 Federal and $1,098,580 non-Federal). Floodplain lands benefited are 15,800 acres. Total annual damages prevented are $38,135; total annual benefits are $96,736. The benefit-cost ratio is 1.4 to 1.

Duralde Des Cannes Watershed, Louisiana

Located in Acadia, Evangeline, and St. Landry Parishes, La., this 161,100-acre project was authorized in 1966. The main project features are: (1) 141,805 acres of land treatment measures costing $1,786,851, and (2) 208 miles of channel improvement. The total estimated project costs are $5,083,132 ($2,467,959 Federal and $2,615,173 non-Federal). Floodplain lands benefited are 142,000 acres. Total annual damages prevented are $91,060; total annual benefits are $220,714. The benefit-cost ratio is 1.5 to 1. The project is 8 percent complete.

Eastern Rapides and South-Central Avoyelles Parishes, Louisiana

The Eastern Rapides and South-Central Avoyelles Parishes project was authorized by the Flood Control Act of December 1970 (Senate Document 91/113/2).

The project consists primarily of 73.4 miles of enlargement of the existing channels of Chatlin Lake Canal, Bayou du Lac, Bayou des Glaises Diversion Channel, and the West Atchafalaya Basin protection levee borrow pit to the vicinity of U. S. Highway 190; a gated nine-barrel diversion structure in the West Atchafalaya Basin protection levee; a gated two-barrel control structure in the borrow pit; a 6-mile outlet channel in the floodway from the diversion structure into the floodway; 17 miles of spoil bank levee; rectification of drainage intercepted by spoil bank levees; a 4.75 mile channel through the ridge along Bayou Garofier; and Federal acquisition of the Lake Pearl area.

Several features of this project will help maintain and enhance existing fish and wildlife and recreational use within the area. Lake Pearl will be turned over to the Louisiana Wild Life and Fisheries Commission for management. An overflow weir will be constructed at the eastern edge of the lake to generally maintain existing low-water conditions for commercial crawfish production. Other features of the project will include such improvements as weirs to maintain fish and wildlife production and a boat-launching facility and access channel to offset loss

of existing access to the highway from camps along the borrow pit and Bayou Courtableau. Work on the project has not begun. The estimated total cost of the project as of June 30, 1970 was $23,160,000 consisting of $21,600,000 Federal cost and $1,560,000 non-Federal cost. The project when completed will provide protection to 124,500 acres and benefit a total of 266,600 acres.

English Bayou Watershed, Louisiana

Located in Calcasieu and Jefferson Davis Parishes, La., this 36,000-acre project was authorized in 1967. The main project features are: (1) 15,400 acres of land treatment measures costing an estimated $380,760, and (2) 44 miles of channel improvement. The total estimated project costs are $1,011,260 ($381,020 Federal and $630,240 non-Federal). Floodplain lands benefited are 24,000 acres. Total annual damages prevented are $27,509; total annual benefits are $80,146. The benefit-cost ratio is 2.3 to 1.

Louisiana Department of Public Works Projects

This section includes drainage systems authorized to be planned and constructed by the Department of Public Works on its own or in cooperation with Federal, State, and local agencies engaged in such activities. Authorization is by Louisiana Revised Statutes of 1950, Title 38, Sections 1 through 17. Local agencies include Police Juries, Drainage Districts, Levee Districts, and other legally constituted districts or agencies. Federal agencies are the Soil Conservation Service, U. S. Department of Agriculture, and the Corps of Engineers, U. S. Army.

The projects are local undertakings with Federal and State assistance. Division of costs in parish-wide systems constructed in the period 1942 to about 1960 was 60 percent of cost contributed by local agency and 40 percent of cost plus engineering, planning, and construction supervision by the Louisiana Department of Public Works.

Principal improvement works consist of parish-wide planning of drainage systems to provide land drainage and protection against floods to agricultural, residential, business and industrial areas and sites. Improvements also include major drainage streams which serve as an outlet for two or more drainage districts or parish drainage systems.

Principal works of improvement consist of excavation of new channels, enlargement and clearing and snagging of existing canals and streams, replacement of or alteration of inadequate drainage structures at crossings, construction of low water crossings and appurtenant water control structures.

Work within WRPA 9 includes 3,378 miles of channel improvements at a total cost of $13,298,311 and floodgates at Kayouche Coulee, Kings Bayou, and Creole Canal, at a total cost of $532,300.

Lower Bayou Teche Watershed, Louisiana

Located in Iberia, Lafayette, St. Mary, and Vermilion Parishes, La., this 188,700-acre project was authorized in 1965. The main project features are: (1) 47,085 acres of land treatment measures costing an estimated $952,468; and (2) 168 miles of channel improvement. The total estimated project costs are $3,076,028 ($1,440,905 Federal and $1,635,123 non-Federal). Floodplain lands benefited are 130,225 acres. Total annual damages prevented are $163,413; total annual benefits are $403,810. The benefit-cost ratio is 2.9 to 1. The project is 75 percent complete.

Lower Red River, Louisiana

The Lower Red River project was authorized by the Flood Control Act of May 15, 1928, House Document 90, 70th Congress, 1st Session and amendments.

The project is located in and along the right bank of Red River between Hotwells, La., and Moncla, La. This project, consisting of 60 miles of levees, is designed to protect against Mississippi River backwater and floods on the Lower Red River.

Bank stabilization works, including dikes and/or revetments, are being placed at locations where caving banks constitute a threat to the levee's integrity and levee setbacks would be uneconomical. Approximately 7.6 miles of bank protection works have been constructed, in lieu of levee setbacks. A surfaced road will be constructed for the entire length of the levee.

Some 48.5 miles or about 80 percent of the levee has been completed to final grade and section. The remainder, while deficient to some degree, does provide a high degree of protection. The estimated cost is $22 million of which $8,723,200 has been expended.

During 1956, the right bank levee, a local levee between Moncla and Lake Long, was rehabilitated to consistent grade and uniform cross section. The work was accomplished under Section 6 of the Flood Control Act of 1920. Total cost was $117,300, of which approximately $39,000 was contributed by local interests. This particular section of levee is still maintained by local interests. The project is 42 percent complete.

Mermentau River, Louisiana

(See Navigation Section for description)

Morgan City and Vicinity Hurricane Protection

(See WRPA 10)

Morganza Floodway

Authorized by Flood Control Act of May 15, 1928 and amendments, this project provides for construction of a controlled floodway to pass floodwaters from the Mississippi River into the Atchafalaya Basin, thereby limiting the flow in the Mississippi River to the safe capacity of the leveed channel below Morganza, La., and for construction of necessary overhead crossings for utilities.

The floodway consists of a combined gated-control structure and high-level highway and railroad crossing on the west bank of the Mississippi River just above the town of Morganza; guide levees to confine the diverted floodwaters into the Atchafalaya Basin Floodway about 20 miles to the south; high-level highway and railroad crossings over the floodway; and drainage alterations and improvements.

Comprehensive easements for full use of the lands within the floodway have been acquired between the guide levees. Habitation within the floodway is not permitted, but use of the lands for farming, removal of timber and minerals, and other purposes not in conflict with flood control is permitted with prior approval.

Descriptions of the various features comprising the floodway are given in the following paragraphs.

Morganza Combined Control Structure

This structure consists of about 19,340 linear feet of levee, and a reinforced-concrete structure having 125 gated openings, each 28 feet 3 inches wide, separated by 3-foot-wide piers. The structure was completed in 1954 at a cost of $20,680,000. The structure was partially opened during the 1973 flood.

Morganza Floodway Levees

This system consists of the upper and lower guide levees which, with the east Atchafalaya River levee, form a floodway averaging about 5 miles in width. The upper guide levee extends about 12 miles southwesterly from the combined control structure to the East Atchafalaya River levee about 2 miles upstream from Melville. This levee will protect more than 100 square miles of productive farmlands in Upper Pointe Coupee Parish from overflow during floodway operations. The lower guide levee extends about 19.4 miles in a southerly direction from the control structure to join the East Atchafalaya Basin protection levee at the latitude of Krotz Springs.

Pointe Coupee Drainage Structure and Bayou Latenache

A drainage system for the upper Pointe Coupee Parish area, which is protected by the upper guide levee, was provided with construction of a drainage structure at the intersection of the levee and Bayou Latenache and the enlargement of the bayou from the structure to U. S. Highway 190. The structure, located about 0.5 mile east of the Atchafalaya River, consists of a reinforced-concrete structure supported on untreated timber piles and contains two manually-operated steel lift gates each 10.5 feet wide and 15.0 feet high.

Inundation rights have been acquired on 12,800 acres of land above the drainage structure for storage of runoff during the closure of the gates for operation of the Morganza Floodway. This feature was completed in 1942 at a cost of $310,000.

Additional drainage work has been authorized for the upper Pointe Coupee area. Improvement will include enlargement of the upper guide levee borrow pit and Bayou Latenache Drainage Canal. Estimated cost of the new work is $1,980,000 Federal and $1,500,000 non-Federal.

High-Level Crossings

A 39,000 foot, single-track, high-level crossing for the Texas and Pacific Railway main line was constructed between McKneely and Red Cross. This feature was completed in 1950 at a cost of $6,500,000.

A similar high-level crossing for the New Orleans, Texas, and Mexico Railway was constructed between Lottie and East Krotz Springs. Consisting of 18,750 linear feet of trestle and 8,350 linear feet of embankment, this feature was completed in 1944 at a cost of $3,300,000.

A third high-level crossing for U. S. Highway 190 was constructed between Lottie and East Krotz Springs. Completed in 1945 at a cost of $4,670,000, this crossing consists of 8,609 feet of paved embankment and 18,778 linear feet of reinforced concrete trestle bridge providing four traffic lanes.

Old River, Louisiana

The Old River project was authorized by Public Law No. 780, 83d Congress, approved September 3, 1954, to provide for control of flows from the Mississippi River to the Atchafalaya River and Basin by mechanically operated control structures on the right bank of the Mississippi River. This is a modification of Flood Control Act of May 15, 1928.

The project consists of a low sill control structure, an overbank control structure, a navigation lock, and a levee from Black Hawk, La. to Torras, La.

Low-Sill Control Structure

This is a reinforced-concrete structure consisting of 11 gate bays, each having a 44-foot clear width between piers. The three center bays have a weir crest 5.0 feet below m.s.l. for passing low flows, and the other bays have a weir crest 10.0 feet above m.s.l. Total length is 566 feet between abutments.

This structure was completed in 1959. The inflow channel, completed in 1960, is 0.5 mile in length and has a bottom width of 1,000 feet, 5.0 feet below m.s.l. The outflow channel, also completed in 1960, has a bottom width of 900 feet at an average of 9.0 feet below m.s.l. About 4,500 acres of land adjacent to these channels were cleared during 1963 to provide better flow conditions in the overbank area.

Overbank Control Structure

This is a reinforced-concrete structure consisting of 73 gate bays, each having a 44-foot clear width between piers. Weir crest is 52.0 feet above m.s.l. Total length is 3,356 feet between abutments. Flow is controlled by hinged timber panels operated by two traveling gantry cranes. This structure was completed in 1959.

Uninterrupted navigation between the Atchafalaya, Ouachita-Black, and Red Rivers, and the Mississippi River System is assured by Old River Lock. Also, the lock is an integral part of a comprehensive plan to preserve the present course of the Mississippi River.

Old River Navigation Lock

Old River Navigation Lock provides for continued navigation between the Atchafalaya, Ouachita-Black, and Red Rivers, and the Mississippi River through Old River. The lock has a width of 75 feet, a usable length of 1,200 feet, and sills 11.0 feet below m.s.l. Contstruction of the lock was initiated in 1958 and completed in 1962. The approach channels were completed and the lock was placed in operation in 1963. A roadway on the levee crosses the lock on a lift bridge which was completed in 1965. Planning is in progress to develop a State park just north and east of the lock.

Levee from Black Hawk to Torras

This levee includes approximately 15 miles of levee required to join the right bank main line levee at Black Hawk with the control structures and lock described above and the main line levee below Old River. This levee is complete. Closure of Old River was completed in 1963.

Bank Stabilization

Bank Stabilization works are being constructed as required in the inflow and outflow channels and along the Red and Atchafalaya Rivers between the outflow channel and the vicinity of Simmesport to control the meandering of the main channels as a result of the construction of the control structure.

The estimated construction cost of the project is $76,609,000. Federal cost is $75,200,000 of which expenditures through June 30, 1970 were $64,808,900. The project is 87 percent complete.

The project preserves the present course of the Mississippi River. If the Mississippi River had changed its course to the Old and Atchafalaya Rivers, the cities of Baton Rouge and New Orleans and many lesser-size communities would have been without sufficient quantities of fresh water to satisfy domestic needs during low-water periods. The vast industrial complex located from Baton Rouge to near the mouth of the river would have been without the fresh water vital to its operation. The Mississippi River as far upstream as Baton Rouge would have become brackish.

Cities, towns, railroads, highways, waterways, industry, agriculture, and utilities in the Atchafalaya Basin would have been subject to partial or complete destruction or serious disruption. The effect would have probably been felt as far upstream as Vicksburg on the Mississippi River and Boyce on the Red River as a result of swifter currents and increased meandering. The investment of the United States in flood control and navigation works would have been threatened and a large amount of it lost. The plan for controlling floods below Old River would have had to be redesigned and reconstructed.

The cost of these losses, not including the dislocation and disruption of industry and agriculture, was estimated conservatively to be $475 million. Also, an additional annual maintenance cost of $6,700,000 would be necessary.

Red River Backwater-Tensas Basin, Louisiana

The Flood Control Act of August 18, 1941, as amended by the Act of October 27, 1965, provides the authority to protect the lower portion of the Tensas Basin from overflow by backwater originating from the Mississippi and Red Rivers.

The Red River Backwater area is the lower portion of the Tensas Basin extending from the head of the Atchafalaya Basin to the general latitude of Monroe, La. The area is subject to overflow from backwater originating from the Mississippi and Red Rivers and their tributaries. Tributary streams divide the area into several subareas. The authorizing document gave the Chief of Engineers authority to provide protection to a larger area in the Red River Backwater provided that the safety and integrity of the Mississippi River levees and other works are not jeopardized. At present, four subareas are included in the authorized project, one of which lies within WRPA 9. This subarea is described below. Other subareas are described under flood control project listings for WRPA 5.

South of Red River Area

This portion of the project consists of extension of the existing south bank Red River levee, along the east side of Lake Long to the authorized Overton-Red River Waterway alignment, thence along the north bank of that waterway to high ground near Marksville. The levee, about 39 miles in length, will vary in height from 13 to 28 feet.

Interior drainage will be discharged through a structure in the levee near the eastern end of the levee. Construction has not been initiated. The levee, when completed, will protect 37,800 acres.

Seventh Ward Canal Watershed, Louisiana

Authorized in 1965, this 32,000-acre project is located in Vermilion Parish, La. The main project features are: (1) 17,000 acres of land treatment measures costing an estimated $353,000; (2) 40 miles of channel improvement; (3) four water control structures; and (4) 3.3 miles of levee. The levees and water control gates are to prevent damage from high tides and from salt water intrusion. Also, the control gates are used to control the water level in the channels. Extra large channels and the water control structures insure a more dependable supply of irrigation water. The estimated project costs are $862,380 ($387,666 Federal and $474,714 non-Federal). Floodplain lands benefited are 22,212 acres. Total annual damages prevented are $56,657; total annual benefits are $114,561. The benefit-cost ratio is 3.5 to 1. The project is complete.

Upper Bayou Nezpique Watershed, Louisiana

Authorized in 1966, this 214,200-acre project is located in Allen and Evangeline Parishes, La. The main project features are: (1) 63,140 acres of land treatment measures costing an estimated $2,154,972; (2) nine floodwater retarding dams; (3) one multipurpose reservoir for floodwater and recreation; (4) one multipurpose reservoir for floodwater and irrigation; (5) 61 miles of channel improvement; (6) 0.4 mile of floodway; and (7) recreation facilities. There is a total of 148.47 square miles of drainage area above the 11 dams (59,240 acre-feet floodwater, 4,096 acre-feet sediment, 1,415 acre-feet recreation, and 8,057 acre-feet irrigation). The irrigation pool surface area is 1,051 acres and recreation pool surface area is 432 acres. The estimated project costs are $7,901,397 ($4,079,942 Federal and $3,821,455 non-Federal). Floodplain lands benefited are 64,000 acres. Total annual damages prevented are $158,216; total annual benefits are $388,689. The benefit-cost ratio is 1.7 to 1. The project is 10 percent complete.

Upper Bayou Teche Watershed, Louisiana

Located in Iberia, St. Landry, and St. Martin Parishes, La., this 210,000-acre project was authorized in 1969. The main project features are: (1) 73,800 acres of land treatment measures costing an estimated $1,590,183, and (2) 265 miles of channel improvement. The total estimated project costs are $4,564,308 ($1,725,510 Federal and $2,838,798 non-Federal). Floodplain lands benefited are 104,000 acres. Total annual damages prevented are $144,266; total annual benefits are $393,329. The benefit-cost ratio is 2.3 to 1. The project is one percent complete.

West Fork of Bayou Lacassine Watershed, Louisiana

Located in Calcasieu and Jefferson Davis Parishes, La., this 34,000-acre project was authorized in 1969. The main project features are: (1) 11,800 acres of land treatment measures costing an estimated $522,370, and (2) 83 miles of channel improvement. The total estimated project costs are $2,003,850 ($838,345 Federal and $1,165,505 non-Federal). Floodplain lands benefited are 34,000 acres. Total annual damages prevented are $66,670; total annual benefits are $194,768. The benefit-cost ratio is 2.4 to 1. This project is under construction.

Other Small Projects

A snagging, clearing, and enlargement project for Bayou des Cyprairres was authorized under Section 2 of the Flood Control Act of 1937 and subsequent modifications. The project, consisting of 6.9 miles of improvement was completed in 1953 at a cost of $42,498.

PROJECT MAP INDEX
Flood Control - WRPA 9

Map Location No.	Name of Project	Agency	Year Complete	Project Uses	Description 1/
	All Projects are in Louisiana				
11.	Atchafalaya Basin	C of E, NOD		FC	Tot. est. proj. cost as of 1 Jul 71, $381,000,000. Expenditures as of 1 Jul 71, $139,012,400. ($67,729,000, levees; $2,329,900, pumping plants; $45,469,900, channel & canals; $9,038,800, bank stab.) (H)
11-27.	Atchafalaya River 40,000 Sq.Ft. Channel		1968		57.8 mi. flowage chan. imp.
11-20.	Atchafalaya River 60,000 Sq.Ft. Channel		Continuing		57.8 mi. flowage chan. imp.
11-28.	Atchafalaya River 80,000 Sq.Ft. Channel		Not started		57.8 mi. flowage chan. imp.
11-29.	Atchafalaya River 100,000 Sq.Ft. Channel		Not started		57.8 mi. flowage chan. imp.
11-35.	Bank Stabilizing Revetment		Continuing		8 revetments totaling 9.9 mi. completed. 18.9 mi. to be constructed.
11-22.	Bayou Berard Drainage Canal		1940		7 mi. chan. imp. $277,000.
11-14.	Bayou Courtableau Control Structures and Diversion Canals		1942	Also Irrigation	Reinforced conc. weirs, widths 482 ft.(east) & 517 ft.(west), about 2.5 mi. diversion canals. Cost $51,200.
11-18.	Bayou Courtableau Freshwater Diversion Structure		Not started		Div. str. w/2 10x10-ft. gated culverts. Cost (1 Jul 71) $1,381,000.
11-12.	Bayou Darbonne Drainage Structure		1941		Reinforced conc. box culvert 10x10x265-ft. long. Cost $60,000.
11- 2.	Bayou des Glaises Culvert		1939		72 in. flap-gated pipe culvert. Cost $26,000.
11- 4.	Bayou des Glaises Diversion Channel		1939		6.1 mi. chan. imp. Cost $228,000.
11- 5.	Bayou des Glaises Fuseplug Levee				8.1 mi. levee.
11- 7.	Borrow Pit Enlargement between Hamburg & Courtableau		1939		30.2 mi. channel enlargement. Cost $345,000.
11- 6.	Brushy Bayou Drainage Structure		1947		Reinforced conc. gated culvert 5x6x230-ft. long.
11-34.	Calumet Floodgate East & West		1950		2 reinforced conc. strs. 161-ft. long x 45-ft. clear width, sill 9.8 ft. below m.s.l. Cost $1,320,000.
11-23.	Channel Improvement from Cypremort to Dauterive		1941		14.3 mi. chan. imp. Cost $791,000.
11-32.	Charenton Drainage Canal		1948		5.7 mi. drainage canal. Cost $2,955,000.
11-30.	Charenton Floodgate		1948		Floodgate 175 ft. long, 45 ft. wide, cost $298,000.
11-16.	Courtableau Drainage Structure		1956		Reinforced conc. gated culvert w/5 10x15-ft.barrels. Cost $1,400,000.
11-21.	East Atchafalaya Basin Protection Levee		Continuing		86.1 mi. levees, 1.7 mi. floodwall (0.1 mi. completed).
11-24.	East Freshwater Distribution Channel		1967		9.7 mi. channel enlargement.
11-13.	East Atchafalaya River Levee		Continuing		51.2 mi. levees.
11-11.	Krotz Springs Ring Levee		Continuing		1.7 mi. levees. (1.6 mi. complete).
11-15.	Krotz Springs Ring South of MPRR Levee		Continuing		2.0 mi. levee. (none complete)
11-33.	Levees West of Berwick		Continuing		58.1 mi. levees, 38 mi. canals, 3 drainage strs., 20 gated culverts, an inverted siphon, 9 pumping plants.
11- 1.	Mansura Hills to Hamburg Levee		Continuing		20.1 mi. levees.
11-10.	Melville Ring Levee		Continuing		4.3 mi. levees.
11-17.	Sherburne Freshwater Structure		Not started		Div. str. w/2 10x10-ft. gated culverts. Cost (1 Jul 71) $1,442,000.
11- 3.	Simmesport Ring Levee		Continuing		1.6 mi. levees.
11-31.	Wax Lake Outlet		1942		15.7 mi. drainage canal a depth of 45 ft. below m.s.l. Cost $7,122,000
11-26.	West Atchafalaya Basin Protection Levee		Continuing		126.5 mi. levees. 1.0 mi. floodwall.
11- 9.	West Atchafalaya River Levee		Continuing		60.7 mi. levees (58.7 mi. completed).
11-36.	East and West Access Channels		1966, 1967	Also R,FWL	24 mi. channel imp. (L)
11-37.	Berwick Lock		1951	FC,N	Reinforced concrete structure 45 x 300 ft. w/sill 9.8 ft. below m.s.l. Cost $2,100,000
11-38	Bayou Sorrel Lock		1951	FC,N	Earth chambered, Sector-gated lock 56 x 795 ft. w/sill 15 ft. below m.s.l. Cost $4,700,000
11-39	Bayou Boeuf Lock		1954	FC,N	Earth Chambered, Sector-gated lock 75 x 1,156 ft. w/sill 15 ft. below mean low gulf. Cost $2,784,000
12.	Avoyelles-St. Landry Watershed	SCS(566)	Not started	FC	Proj. area, 247,000 ac. 250 mi. chan. imp. (L)
17.	Bayou Blue Watershed	SCS(566)	1969	FC	Proj. area, 81,840 ac. 36 mi. chan. imp. Est.proj.cost $1,564,042. (L)
9.	Bayou Boeuf Watershed	SCS(566)	Est. 1974	R, I	Proj. area, 187,974 ac. 2 multipurpose reservs. for irrigation & rec. use. 4 water control strs. & chan. imp. for irrigation canal. Minimum basic rec. facs. for site 2. See recreation & water supply (irrigation) data sheets.
29.	Bayou Choupique	C of E, NOD	1954	FC	2.7 mi. chan. enlargement, 2.5 mi. div. chan. Cost $129,930. (L)
8.	Bayou Cocodrie & Tributaries	C of E, NOD	Under const.	FC	Cost $7,490,000. (M)
8- 1.	Bayou Boeuf Chan. Improvements				2.2 mi. clearing & snagging. 14.9 mi. channel enlargement.
8- 3.	Bayou Cocodrie Chan. Improvement				Enlargement of 15.3 mi. Clearing & snagging of 10.0 mi.
8- 2.	Washington to Alexandria Div. Chan.				59.8 mi. diversion channel.
10.	Bayou des Cyprairres Channel Improvement	C of E, NOD	1953	FC	6.9 mi. chan. imp. Cost $42,498. (L)
2.	Bayou Rapides	C of E, NOD	1951	FC	22.6 mi. snagging & clearing & chemical treat.of stumps.Cost $95,179. (L)
1.	Bayou Rapides Watershed	SCS(566)	1966	R, I	Proj. area, 96,970 ac. 1 multipurpose reserv. for irrigation & rec. use. 20 mi. irrigation distribution system. Min. rec. basic facs. See recreation & water supply (irrigation) data sheets.
27.	Bayou Teche and Vermilion River	C of E, NOD	1957	FC, Nav.	100 mi. channel, movable crests on existing dam. Cost $2,892,000.

1/ Degree of protection indicated as follows: Low (L) 1 to 10 yr. frequency.
Medium (M) 10 to 50 yr. frequency.
High (H) 50 to 100 yr. frequency.

PROJECT MAP INDEX
Flood Control - WRPA 9 (continued)

Map Location No.	Name of Project	Agency	Year Complete	Project Uses	Description 1/
	All Projects are in Louisiana				
16.	Bear Creek Watershed	SCS(566)	1965	FC	Proj. area, 20,400 ac. 13 mi. chan. imp. (L). 3 floodwater retard.dams.
24.	Cameron-Creole Watershed	SCS(566)	Not started	FC	Proj. area, 113,000 ac. 35 mi. chan. imp. (L) 3 water control strs. 19 mi. levee. (L)
5.	Chatlin Lake Canal Watershed	SCS(566)	Not started	FC	Proj. area, 99,500 ac. 135 mi. chan. imp. (L)
14.	Cocodrie-Grand Louis Watershed	SCS(566)	Not started	FC	Proj. area, 132,000 ac. 83 mi. chan. imp. (L)
18.	Duralde Des Cannes Watershed	SCS(566)	Est. 1975	FC	Proj. area, 161,100 ac. 208 mi. chan. imp. (L)
4.	Eastern Rapides & South-Central Avoyelles Parishes	C of E, NOD	Not started	FC	Cost (1 Jul 71) $23,160,000 ($1,560,000 Non-Federal).
4- 1.	Chatlin Lake Canal Enlargement				22.8 mi. chan. imp.
4- 2.	Bayou du Lac Enlargement				14.3 mi. chan. imp.
4- 4.	Bayou des Glaises Diversion Channel Enlargement				5.3 mi. chan. imp.
4- 3.	Bayou des Glaises Land Cut				2.9 mi. new channel.
4- 5.	W. Atchafalaya Basin Protection Levee Borrow Pit				Approx. 11 mi. spoil bank levee, div. str. consist. of 9 10x15-ft. barrels; gated str. w/2 gated barrels, ea. 10x10-ft. 31 mi. chan. imp.
4- 8.	Bayou Courtableau Outlet Channel				6.2 mi. chan. imp. 6.2 mi. spoil bank levee.
4- 9.	Butte LaRose & Bayou Garofier Channel Cut				4.8 mi. channel.
4- 6.	Bayou Courtableau Drainage Channel				13.3 mi. intercepted drainage channel.
4- 7.	Bayou Duquesne Access Channel			R, F&W	0.8 mi. small boat access channels.
20.	English Bayou Watershed	SCS(566)	Est. 1972	FC	Proj. area, 36,000 ac. 44 mi. chan. imp. (L)
25.	Louisiana Department of Public Works Projects			FC	
25-11.	Acadia Parish Drainage		1971		Proj. area, 419,840 ac. 302 mi. chan. imp. Cost $2,204,770.
25- 4.	Allen Parish Drainage		1971		Proj. area, 496,000 ac. 50 mi. chan. imp. Cost $401,455.
25- 2.	Avoyelles Parish Drainage		1971		Proj. area, 565,120 ac. 238 mi. chan. imp. Cost $704,521.
25- 3.	Beauregard Parish Drainage		1971		Proj. area, 755,840 ac. 14 mi. chan. imp. Cost $66,576.
25- 8.	Calcasieu Parish Drainage		1971		Proj. area, 708,480 ac. 554 mi. chan. imp. Cost $2,283,206.
25-15.	Cameron Parish Drainage		1971		Proj. area, 1,073,920 ac. 15 mi. chan. imp. Cost $48,411.
25-19.	Creole Canal Floodgate, Cameron Parish		1956		Prevents storm tide flooding. Cost $52,300.
25- 5.	Evangeline Parish Drainage		1971		Proj. area, 447,360 ac. 102 mi. chan. imp. Cost $702,918.
25-17.	Iberia Parish Drainage		1971		Proj. area, 524,800 ac. 348 mi. chan. imp. Cost $1,094,816.
25-10.	Jefferson Davis Parish Drainage		1971		Proj. area, 417,920 ac. 180 mi. chan. imp. Cost $1,416,241.
25-14.	Kayouche Coulee Floodgate, Calcasieu Parish		1963		Provides protection against headwater floods in city of Lake Charles. Cost $424,000.
25-20.	Kings Bayou Floodgate, Cameron Parish		1964		Prevents storm tide flooding. Cost $56,000.
25-12.	Lafayette Parish Drainage		1971		Proj. area, 178,560 ac. 424 mi. chan. imp. Cost $638,187.
25- 7.	Point Coupee Parish Drainage		1971		Proj. area, 378,240 ac. 374 mi. chan. imp. Cost $1,168,811.
25- 1.	Rapides Parish Drainage		1971		Proj. area, 876,160 ac. 241 mi. chan. imp. Cost $720,217.
25-13.	St. Martin Parish Drainage		1971		Proj. area, 331,840 ac. 421 mi. chan. imp. Cost $948,861.
25-18.	St. Mary Parish Drainage		1971		Proj. area, 663,040 ac. 64 mi. chan. imp. Cost $512,989.
25-16.	Vermilion Parish Drainage		1971		Proj. area, 906,240 ac. 51 mi. chan. imp. Cost $385,332.
22.	Lower Bayou Teche Watershed	SCS(566)	Est 1972	FC	Proj. area, 188,700 ac. 168 mi. chan. imp. (L)
3.	Lower Red River	C of E, NOD		FC	
3- 1.	Hotwells to Moncla Levee and Bank Stabilization		Under constr.		2.4 mi. bank stab., 7.8 mi. revet., 60 mi. levees approx. 80% completed. Est. cost (1 Jul 71) $22,000,000.
3- 2.	Moncla-Lake Long Levee		1956		Approx. 2.3 mi. levee imp. Fed. cost $78,300. Non-Fed. cost $39,000.
3- 3.	Coulee des Grues Culvert		1954		Triple 8x8-ft. barrel gated structure.
26.	Mermentau River	C of E, NOD	1952	FC, Nav.	41.5 mi. chan. imp. 2-sector-gated-control strs. Cost $4,632,000.
28.	Morgan City & Vicinity Hurricane Protection	C of E, NOD	Under constr.	FC	Cost (1 Jul 71) $7,970,000 ($2,490,000 Non-Federal).
28- 1.	Morgan City				9.2 mi. levee; Lake Palourde drainage str. w/6 60-in. openings; Bayou Ramos drainage str. w/2 48-in. culverts; Bayou Boeuf drainage str. w/1 48-in. culvert. Cost (1 Jul 71) $2,729,000.
28- 2.	Franklin & Vicinity				24.7 mi. levee; navigable floodgate (56 ft. wide) w/sector gates; conc. drainage str. w/4 60-in. openings; drainage str. w/2 60-in. culverts; drainage str. w/48-in. culvert; drainage str. w/84-in. culvert; drainage str. w/36-in. culvert; alteration of 11 flap-gated culverts; alteration of 11 flap-gated culverts; alteration of 5 pump. stas. Cost (1 Jul 71) $5,241,000.
13.	Morganza Floodway	C of E, NOD		FC	Cost $35,992,116. (H)
13- 3.	Morganza Combined Control Structure		1954		125 gate reinforced conc. str. & 3.7 mi. levee. Cost $20,680,000.
13- 1.	Morganza Floodway Upper Guide Levee		1954		8.9 mi. levee.
13- 4.	Morganza Floodway Lower Guide Levee		1954		19.4 mi. levee.
13- 2.	Pointe Coupee Drainage Structure & Bayou Latenache		1942		2 gate reinforced conc. str. 12,800 ac. for storage. (H)
7.	Old River	C of E, NOD		FC	Cost $76,609,000. (H)
7- 2.	Low Sill Control Structure		1963		Reinforced conc. strs. w/11 gatebays, 0.5 mi. inflow channel.

1/ Degree of protection inlicated as follows: Low (L) 1 to 10 yr. frequency.
Medium (M) 10 to 50 yr. frequency.
High (H) 50 to 100 yr. frequency.

PROJECT MAP INDEX
Flood Control - WRPA 9 (continued)

Map Location No.	Name of Project	Agency	Year Complete	Project Uses	Description 1/
	All Projects are in Louisiana				
7- 1.	Overbank Control Structure		1959		Reinforced conc. str. w/73 gatebays.
7- 3.	Levee from Black Hawk to Torras		1963		Approx. 15.0 mi. levees.
7- 4.	Old River Closure & Lock		1963		Nav. lock 1,200 ft.x75 ft., approx. 2,000 ft. rock-fill closure str., approx. 4 mi. approach channels.
6.	Red River Backwater, Tensas Basin	C of E, VXD	Under constr.	FC, F&W	Tot. cost $52,300,000. $14,067,000 spent through June 30, 1971.
6- 1.	South of Red River Area		Not started		Ext. of exist. south bank of Red R. levee. Approx. 39 mi. in length.
23.	Seventh Ward Canal Watershed	SCS(566)	1970	FC, I	Proj. area, 32,000 ac. 40 mi. chan. imp. (L) See multipurpose & water supply (irrigation) data sheets.
15.	Upper Bayou Nezpique Watershed	SCS(566)	Est. 1980	FC, I, R	Proj. area, 214,200 ac. 11 dams w/148.47 sq. mi. drainage area. 61 mi. chan. imp. .4 mi. floodway. Minimum rec. basic facs. See flood control, recreation, and water supply (irrigation) data sheets.
19.	Upper Bayou Teche Watershed	SCS(566)	Est. 1976	FC	Proj. area, 210,000 ac. 265 mi. chan. imp. (L)
21.	West Fork of Bayou Lacassine Watershed	SCS(566)	Not started	FC	Proj. area, 34,000 ac. 83 mi. chan. imp. (L)

1/ Degree of protection indicated as follows: Low (L) 1 to 10 yr. frequency.
Medium (M) 10 to 50 yr. frequency.
High (H) 50 to 100 yr. frequency.

LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

FLOOD CONTROL

WRPA 9

FIGURE 49

NAVIGATION

Aquatic Plant Control

(See WRPA 8 for Description)

Atchafalaya River

This $303,500 project, completed in February of 1956, is a navigation feature of the Mississippi River and Tributaries project. (See WRPA 1.) The channel, 12 feet deep over a bottom width of 125 feet, extends from the Gulf Intracoastal Waterway at Morgan City to the Mississippi River via the Atchafalaya and Old Rivers. As a shortcut from the GIWW at Morgan City to the upper Mississippi, this project affords travel savings of 172 miles and eases port congestion at New Orleans. Average annual traffic, 1965-1969, was 4,269,097 tons. 1970 traffic was 464,923,747 ton miles.

Atchafalaya River and Bayous Chene, Boeuf, and Black, Louisiana

(See WRPA 10 for Description)

Atchafalaya River, Morgan City to the Gulf of Mexico, Louisiana

The River and Harbor Act of June 25, 1910 provides for a channel 20 feet deep, 200 feet wide, and 15.75 miles long from the 20-foot contour in Atchafalaya Bay, which is approximately 4 miles beyond the mouth of the Atchafalaya River, to the 20-foot contour in the Gulf of Mexico.

The controlling depths (mean low gulf (m.l.g.)) (May 1970) are as follows: Bar Channel, 12.0 feet; Bay Channel, 12.0 feet.

The existing project was completed in 1914. Improvement of a portion of this project is reported separately under "Atchafalaya River and Bayous Chene, Boeuf, and Black, La."

Costs through June 30, 1971 are $502,000 for construction and $4,332,200 for maintenance.

Most traffic on the channel is associated with the offshore oil industry. In 1970, it totaled 278,351 foreign and 143,146,458 domestic ton miles.

Bayou Plaquemine Brule', Louisiana

The River and Harbor Act of June 25,1910 provides for a 6-foot by 60-foot channel from mouth of Bayou Plaquemine Brule' to mile 19, near Crowley, La.

The controlling depth (m.l.g.) (July 1969) mile 0 to mile 5.1 is 10.0 feet. Work was completed in 1915. An unfavorable report was made in June 1961 and no other further work is anticipated. Total cost through June 30,1971 is $33,410. Principal cargoes on this waterway are shells and crude petroleum. Traffic in 1970 was 1,549,279 ton miles.

Bayou Queue De Tortue, Louisiana

The River and Harbor Act of July 25, 1912 provides for removal of obstructions from the mouth to Southern Pacific RR. bridge at Riceville, La., and dredging 10 cutoffs. Length of improvement is 14 miles. The stream is 50 to 110 feet wide. No dimensions are specified for cutoffs.

The controlling depth (below m.l.g.) is as follows: January 1959, (m.l.g.) mile 7.0, 5.5 feet. (Numerous submerged logs and overhanging trees make stream practically nonnavigable.) The project was completed March 12, 1923, at a cost of $33,355. No commerce has been reported since 1955.

Bayou Teche, Louisiana

River and Harbor Act of June 26, 1934, and prior River and Harbor Acts provide for dredging a channel 8 feet by 80 feet from the mouth of Bayou Teche (at lower Atchafalaya River) to New Iberia, 54.5 miles; thence 6 feet by 60 feet to Keystone Lock, 17.5 miles; thence 6 feet by 50 feet to Arnaudville, 34.5 miles; and for constructing a lock, dam, and regulating works. Length of improvement is 106.5 miles. Under the "Flood Control, Mississippi River and Tributaries" (FCMR&T) project, 45-foot wide floodgates (East and West Calumet Floodgates) have been provided in the Wax Lake outlet levees where they cross Bayou Teche.

Controlling depths (m.l.g.) (October 1969) are as follows: mile 0 to mile 4.5 (Calumet Control Structures) 7.0 feet; through Calumet Control Structures, 4.0 feet; to mile 7.5 (Shadyside Bridge) 6.5 feet; to mile 17.1 (Franklin Bridge) 6.5 feet; to mile 21.7 (Missouri-Pacific RR.) 6.0 feet; to mile 27.0 (Baldwin Bridge) 6.0 feet; to mile 32.0 (Charenton Bridge) 11.0 feet; to mile 37.0 (Adeline Bridge) 8.0 feet; to mile 50.0 (New Iberia) 5.0 feet; (October 1969) to mile 58.0 (Belle Place) 4.0 feet; to mile 60.5 (Loreauville Canal) 5.0 feet; to mile 72.0 (Keystone Dam) 9.0 feet; to mile 84.5 (Parks Oil Dock) 9.0 feet; to mile 87.0 (Ruth Bridge) 9.0 feet.

The East and West Calumet Floodgates, constructed with FCMR&T funds were completed September 22, 1950 and July 12, 1950, respectively, at a cost of $1,320,000.

The project is 66% complete with total costs through June 30, 1971 of $754,330. Major cargo in 1969 included shells, crude petroleum, coal, petroleum products and sugar. Traffic in 1970 totalled 32,428,314 ton miles.

Bayou Teche and Vermilion River, Louisiana

The Flood Control Act of August 18, 1941 provided for the following improvements in Bayou Teche and Vermilion River: A new channel 8 feet by 80 feet from the 8-foot contour in Vermilion Bay to the Gulf Intracoastal Waterway (GIWW); a navigable channel 9 feet by 100 feet from the GIWW to the head of navigation (mile 52) at Lafayette, La., for navigation and flood control (in this section the flood requirements exceed the 9-foot by 100-foot channel from the GIWW to mile 17.5); improvement of the non-navigable channels of Vermilion River and Bayou Fusilier from Lafayette, La., to Bayou Teche (mile 79); channel enlargement in Bayou Teche from 2 miles below Arnaudville to Port Barre, La.; an increase in the pool elevation above Keystone Dam from 8 to 11 feet, m.l.g., later revised to 9.5 feet by the addition of movable crest gates on the existing dam; and the construction of a suitable control works in Ruth Canal by local interests. This multipurpose project provides improvements for navigation, flood control, and water supply for irrigation.

Controlling navigation depths, (m.l.g.) (August 1969) are as follows: Bar Channel, 8.0 feet; to GIWW 11.0 feet; to mile 25.45 (Highway Bridge Abbeville, La.), 10.0 feet; to mile 30.0, 8.0 feet; to mile 35.0, 8.0 feet; to mile 40.0, 8.0 feet; to mile 45.0, 5.0 feet; to mile 50.0 (Pinhook Bridge, Lafayette, La.), 5.0 feet.

Construction under the project commenced on March 20, 1944 and was completed on March 27, 1957. The total cost of the project is $2,891,922. Crude petroleum, petroleum products, clay and clamshells are major cargoes. Traffic in 1970 totalled 14,945,993 ton miles.

Big Pigeon and Little Pigeon Bayous, Louisiana

The River and Harbor Act of July 13, 1892 and subsequent acts, authorized the use of funds for the removal of obstructions in Big Pigeon and Little Pigeon Bayous throughout their entire lengths, approximately 27 miles.

No information is available concerning controlling depths. Obstructions were removed in 1934 and the project has been classified inactive. Abandonment of project was recommended in House Document 1962, 64th Congress, 2d Session and House Document 467, 69th Congress, 1st Session. The total cost of the project was $37,669.

Traffic in 1970 totalled 1,758,608 ton miles. Major cargoes were crude petroleum and liquefied gases.

Calcasieu River and Pass, Louisiana

River and Harbor Act of July 24, 1946, House Document 190, 79th Congress, 2d Session and prior River and Harbor Acts, provide for a channel 35 feet deep by 250 feet wide from the wharves of the Lake Charles Harbor and Terminal District (including the Loop around Clooney Island) to the Gulf of Mexico, via Calcasieu Lake and through Calcasieu Lake and through Calcasieu Pass, a channel 35 to 37 feet deep and 250 feet wide between the jetties, and an approach channel 37 feet deep and 400 feet wide seaward to the jetties in the Gulf of Mexico; the reconstruction and extension of existing jetties to the 15-foot depth contour if and when it becomes necessary; improvement of the river from Lake Charles to Phillips Bluff by removing logs, snags, overhanging trees and by dredging. Total length of improvement is approximately 102.1 miles.

River and Harbor Act of July 14, 1960, House Document 436, 86th Congress, 2d Session provides for an approach channel having a depth of 42 feet below mean low gulf (m.l.g.) level over a bottom width of 800 feet from the 42-foot depth in the Gulf of Mexico to the jettied channel; a channel between the jetties varying in depth from 40 to 42 feet at the seaward end and shoreline, respectively; over a bottom width of 400 feet; a channel 40 feet deep over a bottom width of 400 feet from the shoreline; mile 0, to the wharves of the Port of Lake Charles, mile 34.1; enlargement of the existing turning basin at mile 29.6 to a depth of 40 feet; and a mooring basin about mile 3 having a width of 350 feet, a length of 2,000 feet, and a depth of 40 feet; extension of the existing ship channel at a depth of 35 feet below m.l.g. level over a bottom width of 250 feet from the wharves of the port of Lake Charles, mile 34.1, to the vicinity of the bridge on United States Highway No. 90, mile 36.0, and a turning basin of the same depth at the upper end having a width of 750 feet and a length of 1,000 feet; and maintenance of the existing channel, 12 feet deep and 200 feet wide, from the ship channel to Cameron, La., via the old channel of the Calcasieu River.

River and Harbor Act of October 23, 1962, House Document 582, 87th Congress, 2d Session, provides for a salt water barrier structure with five 40-foot tainter gates in a new bypass channel; a parallel channel with a navigation structure and a single sector type gate; an earth closure dam, and a woven lumber type revetment.

The controlling depths (m.l.g.) are as follows: (April 1970) bar and jetty channel, 40.0 feet; to mile 5, 39.0 feet; to mile 30, 40.0 feet; (November 1969) to shed #1 (Lake Charles Dock), 38.0 feet;

Rice-growing lands above Lake Charles are protected from salt water intrusion by the Calcasieu Salt Water Barrier.

dredging complete April 20, 1970. (January 1968 to Cameron, 8.0 feet.) Subsequent to these surveys the project channel was restored as above indicated. (February 1970) to mile 38.7, 24.0 feet; to mile 50, 13.0 feet; to mile 60, 9.0 feet; (snags and trees - nonnavigable above this point).

Work under the Act of July 24, 1946 was completed in July, 1957. Construction under modification of July 14, 1960 was completed in October 1968. Work under the Act of October 1962 is approximately 100 percent complete. Total cost of completed works is $31,937,886.

Traffic in 1970 totalled 302,597,838 ton miles. Major cargoes were crude petroleum, petroleum products, and chemicals. Above Lake Charles, the Calcasieu River provides excellent fishing and hunting. Private camps, picnic areas, and commercial recreational facilities are available from Phillips Bluff to Lake Charles.

Freshwater Bayou, Louisiana

The River and Harbor Act of July 14, 1960, House Document 435, 86th Congress, 2d Session, authorized a navigation channel 12 feet deep and 125 feet wide from the GIWW in the vicinity of Vermilion River at mile 161.2 west of Harvey Lock to the 12-foot depth contour in the Gulf of Mexico near Freshwater Bayou, with increased width to 250 feet in the Gulf approach as may be found advisable; jetties from the shoreline to the 6-foot depth contour in the Gulf of Mexico, and a salt water intrusion lock near the Gulf of Mexico, 84 feet wide, 600 feet long and 16 feet deep.

The controlling depths, m.l.g. (February 1970) are as follows: GIWW to mile 0, 12 feet; (May 1970) Bar Channel, 11 feet.

The lock project was completed in 1968 at a cost of $7,132,300, except for the cost of construction of jetties at a later date, estimated at $3,118,000.

The channel and lock give access to petroleum, gas, salt, and sulphur resources in the Gulf. It is also used by trappers and fishermen. Traffic in 1970 was 501, 854 ton miles. Marine shells and crude petroleum were the major cargoes.

Gulf Intracoastal Waterway Between Apalachee Bay, Florida, and the Mexican Border

River and Harbor Act of July 24, 1946, Senate Document 242, 79th Congress, 2d Session, and prior River and Harbor Acts, authorize construction of this project. Project features within the State of Louisiana are described below:

(1) A waterway 384.1 miles long, 12 feet deep and 125 feet wide at m.l.g. from Lake Borgne Light No. 29 (formerly No. 41), near the mouth of the Rigolets to the Sabine River, La. and Tex., except in the section between Lake Borgne Light No. 29 and New Orleans (33.1 miles long via land cut through the marsh and the Industrial Canal) where a width of 150 feet is provided.

(2) An alternate route 40.5 miles long, 9 feet deep by 100 feet wide between Lake Borgne Light No. 29 and New Orleans (via Rigolets, Lake Pontchartrain, and Industrial Canal).

(3) An alternate connection with the Mississippi River below Algiers, approximately 9 miles long, 12 feet deep and 125 feet wide with a lock (Algiers Lock) at the river end.

(4) An alternate route 12 feet deep and 125 feet wide from Morgan City, La., to Port Allen, La., via the East Atchafalaya Basin Protection Levee Borrow Pit, Bayou Sorrel Lock (constructed with FCMR&T

funds), Lower Grand River and Bayou Plaquemine to Indian Village, thence via Bayou Grosse Tete and new land cut to the Mississippi River passing through a terminal lock in the levee at Port Allen opposite Baton Rouge.

(5) A channel 9 feet deep and 100 feet wide from Indian Village via Bayou Plaquemine and Plaquemine Lock to the Mississippi River at Plaquemine, La.

(6) Improvement of Franklin Canal as a connecting channel from GIWW (mile 121) to Franklin, La., 8 feet deep by 60 feet wide, with its upper 300 feet having a width of 100 feet.

(7) Also included are the construction of a lock at Harvey, La. (Harvey Lock), a salt water guard lock (Vermilion Lock) in the waterway at mile 172.8 west of Harvey Lock, a salt water guard lock (Calcasieu Lock) in the waterway at mile 238.5 west of Harvey Lock, and a lock at mile 93.5 (Bayou Boeuf Lock) west of Harvey Lock, constructed under the existing project, "Flood Control, Mississippi River and Tributaries." The project also provides for the following: widening of bends, passing places, mooring basins, such railroad and highway bridges over artificial cuts as are necessary; purchase of pipeline dredge; construction and operation of new drainage canals and pumping facilities to restore parish drainage systems where intercepted; construction of a double-leaf bascule four-lane highway bridge 1/ with approaches at Louisiana State Highway No. 47; construction of movable bridges at Missouri-Pacific RR and Louisiana State Highways Nos. 23 2/ and 406; fixed trestle bridges for crossing of proposed landside drainage canals; lift bridges at Louisiana State Highway No. 1 3/ at Port Allen, La., Texas & Pacific RR at Morley, La.; construction of bulkheads and jetties at

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1/ Construction of this bridge has become unnecessary under this project due to the fact that the portion of the project over which the bridge was to be constructed has been incorporated in the project, "Mississippi River-Gulf Outlet," which provides for a fixed high level bridge.

2/ In lieu of the bridge at State Highway No. 23, a tunnel was constructed and completed 15 February 1956. Additional cost over estimated cost of bridge was borne by local interests.

3/ In lieu of a lift bridge at Louisiana State Highway No. 1 at Port Allen, a 4-lane fixed bridge was constructed by Department of Highways, State of Louisiana, in accordance with Public Law 85-167, 85th Congress (Fiscal Year 1958 Appropriation Act) approved August 26, 1957, which contained the following proviso: "Provided further, that not to exceed $3,500,000 of the funds hereinafter provided for the Plaquemine-Morgan City Alternate Route, shall be available for the construction of a 4-lane, high-level fixed bridge on Louisiana State Highway No. 1 (formerly Route No. 167) over the extension of the Plaquemine-Morgan City Route of the Gulf Intracoastal Waterway in West Baton Rouge Parish, Louisiana."

Lake Borgne and Chef Menteur, La., if found necessary, and for annual payments to the Board of Commissioners of the Port of New Orleans for use of a portion of the Inner Harbor Navigation Canal and Lock. The length of waterway within WRPA's 8, 9, and 10 is 384.1 miles via the northerly or Port Allen route and 299.4 miles via the southerly or Harvey Canal Route.

Modification authorized by River and Harbor Act of October 23, 1962, House Document 556, 87th Congress, 2d Session, provides for the following:

(1) A channel 16 feet deep and 150 feet wide from the Mississippi River to Atchafalaya River, via Algiers Canal, except in the vicinity of Houma, Louisiana (mile 50.5 to 63.5);

(2) A by-pass route at Houma;

(3) A channel 16 feet deep and 200 feet wide through the reach from Atchafalaya River to the Sabine River; and

(4) Four highway bridges (United States to contribute 58 percent of construction costs).

Controlling depths (m.l.g.) (January 1970), are as follows: New Orleans to Lake Borgne, 12 feet; (October 1969) Mississippi River to Atchafalaya River, 12 feet; (February 1970) to Vermilion River, 12 feet; (January 1970) to Mermentau River, 12 feet; (January 1970) to Calcasieu River, 12 feet; (July 1969) to Sabine River, 15 feet; (June 1969) GIWW, Morgan City-Port Allen Route (landside) mile 0 to mile 5, 8.5 feet; to mile 10, 9 feet; to mile 20, 8 feet, to mile 25, 9 feet; to mile 30, 8 feet; to mile 35, 6.5 feet; to mile 40, 8 feet; to mile 45, 6 feet; to mile 49.5, 6 feet.

The main stem of the waterway as authorized under River and Harbor Act of July 24, 1946 has been completed to a 12-foot depth. The project as modified by the Act of 1962 is 61 percent complete. Total cost through June 30, 1971 (Louisiana only) is $62,688,163. Traffic in 1970 totaled 1,011,763,341 ton miles along the Morgan City-Port Allen Route.

Inland Waterway Franklin to Mermentau River, Louisiana

The River and Harbor Acts of March 2, 1907; March 3, 1909; February 27, 1911, July 25, 1912; March 2, 1919; and June 26, 1934, provide for a waterway 5 feet by 40 feet from Bayou Teche at or near Franklin to Mermentau River with locks at Hanson Canal and in Schooner Bayou. The project, completed in 1924, has been largely superseded by GIWW and the modified Flood Control Project, Mermentau River, La., authorized by River and Harbor Act of July 24, 1946. Length of improvement is approximately 9 miles.

The controlling depths (m.l.g.) (August 1969), are as follows: from mile 161 GIWW to Schooner Bayou Control Structure, 8 feet; to White Lake, 8 feet; through White Lake, 3.5 feet; to Turtle Lake, 14 feet; through Turtle Lake 7 feet; to Collicon Lake, 9 feet; through Collicon Lake, 3 feet; to Grand Lake, 11 feet; through Grand Lake to Mermentau River (mile 25). 3 feet; through Grand Lake to 47.6 (mile 202) GIWW, 3 feet.

Hanson Canal and Lock, acquired on October 16, 1923, was transferred to the Police Jury of St. Mary Parish on August 25, 1959, Public Law 85-837, 85th Congress, 2d Session, approved August 28, 1958. Total cost of the project is $249,052. Traffic in 1970 was 36,883 ton miles for the Franklin Canal reach.

Lake Charles Deep Water Channel, Louisiana

This project was authorized under River and Harbor Acts of August 29, 1935 and August 26, 1937. It originally provided for Federal maintenance of the 30-foot by 125-foot channel constructed by local interests between the Calcasieu and Sabine Rivers, a distance of approximately 24.9 miles. However, the project is now inactive, since direct access from Lake Charles to the Gulf was provided by the "Calcasieu River and Pass 35-foot Project."

This project coincides for its entire length with the GIWW. All traffic over this waterway is barge traffic associated with the GIWW. Traffic in 1970 was 930,400,651 ton miles.

Lake Charles Port, Louisiana

The port of Lake Charles is in the southwestern part of the State of Louisiana, about 130 nautical miles east of Galveston, Tex., and, by way of the Southwest Pass of the Mississippi River, is 444 nautical miles west of New Orleans, La. The city of Lake Charles is on the east side of Lake Charles, about 32 nautical miles from the Gulf of Mexico by way of the Calcasieu River and Pass, the deepwater entrance to the port.

Known as the Lake Charles Harbor and Terminal District, the port of Lake Charles embraces an area of 203 square miles located entirely within Calcasieu Parish and includes the cities of Lake Charles and West Lake.

In addition to Federal improvements described under "Calcasieu River and Pass," the Lake Charles Harbor and Terminal District constructed a deepwater channel extending northeastward from mile 22.6 on the main ship channel to an industrial park area. This channel, known as the Industrial Canal, has a depth of 35 feet at m.l.g. level, a length of about 2.3 miles, and passes through the Devil's Elbow section

of the river along the northerly side of Choupique Island; this section of the river is also traversed by the GIWW. Plans call for further extension of the Industrial Canal and construction of a turning basin at its inner end near Louisiana State Highway No. 384.

Sixty piers, wharves, and docks are in the port of Lake Charles. Forty-seven of these waterfront facilities are on both sides of the Calcasieu River, on the north side of Contraband Bayou and the Industrial Canal, west side of Lake Charles, and on the Rose Bluff Cutoff. Four are on the Old River opposite the north end of Coon Island, seven are on the channel (The Loop) around Clooney Island, and two are on the Bayou D'Inde.

Table 30 summarizes the piers, wharves, and docks at the port by purpose for which used or type of service offered. 1970 traffic was 16,697,672 tons.

Lake Charles Harbor is a busy port which is served by the Calcasieu River and Pass Project.

Table 30 - Lake Charles Port Piers, Wharves, and Docks

Purpose for Which Used	No.	
Cargo handling:		
Alumina, raw and calcined petroleum coke, and molded carbon anode blocks	3	
Cement	3	
Chemicals, chlorine, ammonia, propylene, ethylene glycol, sulphuric acid, styrene, aluminum sulphate, liquid caustic soda, and ethylene dichloride	9	
Fish oil, bulk rice, and linerboard (one each)	3	
General cargo - in foreign and domestic trades	3	1/
Petroleum products, crude oil, and petrochemicals	21	2/
Phosphate rock, barite ore, and ground barite	1	
Pipe	2	
Prestressed concrete beams and products	1	3/
Shell	5	
Marine services and repairs:		
Mooring	5	
Mooring in connection with marine repairs and outfitting	1	
Unused facilities at time of survey	3	
Total	60	

1/ One also receives coconut oil; one, creosote; and one, fertilizer materials.
2/ One is also used for shipment of ethylene glycol and one, for shipment of sulphuric acid and spent caustic soda.
3/ Also used for receipt of shell and sand.

Mermentau River, Louisiana

The project was authorized by Flood Control Act of August 18, 1941, as modified by River and Harbor Act of July 24, 1946.

Work authorized under this project includes channel improvement of the Mermentau River below Grand Lake and existing channels between Grand and White Lakes and between White Lake and Vermilion Bay to provide channels with areas of 3,000 square feet below m.l.g. level for floodflows; the construction of control structures in the enlarged

channels near Grand Lake (at Catfish Point) and the Schooner Bayou Lock to prevent salt-water intrusion into the Mermentau Basin; the enlargement of Schooner Bayou Cutoff and North Prong of Schooner Bayou to provide 6-foot by 60-foot channels for navigation; and for the incorporation of the completed project, "Waterway from White Lake to Pecan Island," and that part of the completed project, "Inland Waterway from Franklin to the Mermentau River," west of the Vermilion River. This project was completed in 1952 at a cost of $4,631,910.

The Catfish Point Control Structure has three sets of gates, each set having a width of 56 feet. The sill elevations of two sets are at 15 feet below m.l.g. level, and the other set at 10 feet below m.l.g. level. The Calcasieu and Vermilion Locks were completed in 1951 and 1934, respectively, under the navigation project, "Gulf Intracoastal Waterway Between Apalachee Bay, Fla., and the Mexican Border." These locks were constructed to prevent salt-water intrusion into the Mermentau Basin through the Intracoastal Waterway, and are operated in conjunction with the Schooner Bayou and Catfish Point Control Structures for regulation of the water levels in Grand and White Lakes.

Controlling depths (mean gulf level), (July 1968) Bar Channel 4.0 feet; (July 1969) mile 0 to mile 24.0, 7.0 feet; to Grand Lake, 7.0 feet; to mile 202 GIWW (through Grand Lake), 3.0 feet; and Des Cannes, 7.5 feet.

The controlling depths (mean gulf level) of inland water from Franklin to the Mermentau River, La., are as follows: (August 1969) mile 161 (GIWW) to Schooner Bayou Control Structure, 8.0 feet; to White Lake, 8.0 feet, through White Lake, 3.5 feet; to Turtle Lake, 14.0 feet, through Turtle Lake, 7.0 feet; to Collicon Lake, 9.0 feet; through Collicon Lake, 3.0 feet; to Grand Lake, 11.0 feet; through Grand Lake to Mermentau River (mile 25), 3.0 feet; through Grand Lake to mile 47.6 (mile 202) GIWW, 3.0 feet.

In June 1969, the GIWW through north prong of Schooner Bayou was 6.5 feet. In October 1955, the waterway from White Lake over bar was 1.0 foot; to Pecan Island, 4.0 feet.

The cumulative benefits are estimated at $13,119,000, comprised of $12,277,000 irrigation benefits and $1,252,000 flood damages prevented, less $410,000 for estimated costs of delays to navigation at Calcasieu Lock. The gates of Schooner Bayou Lock, a feature of the incorporated portion of the "Inland Waterway from Franklin to the Mermentau River," failed in 1951, and the lock was permanently closed and traffic routed through the control structure. The traffic in 1970 was 22,217,642 ton miles.

Mermentau River, Bayous Nezpique and Des Cannes, Louisiana

This project was authorized under River and Harbor Act of 1892, as modified in 1916 and 1919; House Document 36, 72d Congress, August 30, 1935, and House Document 239, 89th Congress, 1st Session, July 13, 1965.

The completed portion of this project consists of removal of obstructions to navigation in the natural channel of the Mermentau River from its head at the junction of Bayous Nezpique and Des Cannes to the Gulf, a distance of about 71.5 miles; in Bayou Nezpique for the lower 25 miles; and in Bayou Des Cannes from its mouth to the Evangeline Bridge, a distance of about 8.5 miles; improvement of the channel in lower Mud Lake by dredging and by construction of a brush dam to concentrate the action of the current; removal of a portion of the wrecked dam at mile 7; and a channel 9 feet deep at m.l.g. level and 100 feet wide from the Intracoastal Waterway to the Junction of Bayous Nezpique and Des Cannes. These improvements were completed in 1949. Traffic along this project in 1970 was 51,085,609 ton miles.

That part of the project in the lower Mermentau River below Grand Lake has been superseded by the project, "Mermentau River."

The controlling depths (m.l.g.) are as follows: Mermentau River (July 1968) over bar, 4.0 feet; (January 1969) mile 0 through Lower Mud Lake to mile 24, 7.0 feet; to Grand Lake, 7.0 feet; to mile 202 GIWW to mile 71.5, Mermentau River (junction Bayous Nezpique and Des Cannes), 7.5 feet; Bayou Nezpique (July 1969) mile 0 to mile 7.0, 16.0 feet; Bayou Des Cannes (July 1969) mile 0 to I-10 highway bridge, 13.0 feet.

The River and Harbor Act of 1965 authorized the enlargement and realignment of Bayous Nezpique and Des Cannes to obtain a 12-foot by 125-foot channel from Interstate Highway 10 to the Mermentau River; realignment of the Mermentau River upstream of the GIWW by the construction of several cutoffs, each 12 by 125 feet; enlargement of the channel through Lake Arthur to 12 by 200 feet; and the replacement of the highway bridge at the town of Lake Arthur with a new structure having a vertical clearance of 50 feet and a horizontal clearance of about 200 feet.

Estimated cost of the project modification as of July 1971 was $5,991,000 Federal, including $51,000 for navigation aids, and $1,533,000 non-Federal. Cost of the existing project modification through June 30, 1971 was $4,370,000.

Petit Anse, Tigre and Carlin Bayous, Louisiana

The River and Harbor Act of March 2, 1945 and prior River and Harbor Acts, provide for a channel 9 feet by 80 feet in Bayou Petit Anse from the GIWW to the north end of Avery Island, mile 6.1; 9 feet by 80 feet in Bayou Carlin from mouth to Lake Peigneur, mile 7.6; 7 feet by 60 feet in Avery Canal (McIlhenny) from Intracoastal Waterway to Vermilion Bay. Total length of improvements is 16.1 miles.

The River and Harbor Act of June 30, 1948, provides for protecting piers of railway bridge crossing Bayou Carlin at Delcambre, Louisiana. The River and Harbor Act of July 14, 1960 provides for a 7-foot by 60-foot channel in Avery Canal and a mooring area along the right bank of Bayou Carlin below the south edge of Delcambre, 9 feet deep by 1,300 feet long, with width varying from 200 to 125 feet. Mooring facilities have been constructed in the harbor of refuge by non-Federal interests.

The controlling navigation depths (m.l.g.) are as follows: Bayou Petit Anse (April 1970) mile 0 (GIWW) to mile 6.1, 9 feet; Bayou Carlin (April 1970) mile 0 to mile 7.6, 9 feet; Avery (McIlhenny Canal), April 1970, mile 0 (GIWW) to mile 2 (Vermilion Bay), 11 feet; mile 2.7 (Bar Channel), 7 feet.

The project was completed March 30, 1962, at a cost of $392,247, including $47,858 Public Works Fund.

Traffic in 1970 totaled 11,116,316 ton miles. These waterways are also used for access to fishing and hunting areas and for boating and skiing.

Vermilion Lock, Louisiana (Replacement)
Gulf Intracoastal Waterway

Vermilion Lock is located in the Atchafalaya River-Sabine River section of the GIWW about 2 miles west of the Vermilion River. This lock is 1,182 feet long, 56 feet wide, with a depth over the sill of 11.3 feet below m.l.g. elevation. Because of its limitations of sill depth and width, the lock is a hindrance to navigation.

A replacement lock was approved by the Secretary of the Army in May 1967, under authority contained in Section 6 of the River and Harbor Act of May 1909. The new lock will be located just south of the existing waterway and just west of the existing lock. This lock will be 75 feet wide, 1,200 feet long, and will have a depth over sill of 15 feet below m.l.g. elevation. Estimated costs for the replacement of Vermilion Lock as of June 30, 1971 are $8,380,000 Federal and $7,400 non-Federal. Traffic through existing lock in 1970 was 43,162,159 tons.

Vermilion Lock is a part of the Gulf Intracoastal Waterway. It serves to prevent salt water intrusion into the Mermentau Basin.

Vinton Waterway, Louisiana

The project was authorized by Act of August 26, 1937. It provides for improvement of the Vinton Drainage Canal, to provide a navigable channel 9 feet deep and 60 feet wide from its intersection with the Lake Charles Deep Water Channel to a basin of the same depth, 100 feet wide and 200 feet long, at Vinton, La. Length of improvement is 9.7 miles.

The controlling depths (m.l.g.) (July 1969) are as follows: GIWW, mile 0 to 1, 7 feet; to mile 7.8, highway bridge, 5.5 feet.

Requirements of local cooperation have not been met. No work will be done until such cooperation has been provided. There has been no cost. Traffic in 1970 was 57,010 ton miles. Major cargo was crude petroleum.

PROJECT MAP INDEX
Navigation and Harbors - WRPA 9

Map Location No.	Name of Project	Agency	Year Complete	Project Uses	Description
1.	Aquatic Plant Control	C of E, NOD	Continuing	N, FC, F&W, R	Removal of obnoxious aquatic plant growths fm navigable streams & related waters. Tot. est. annual cost $5,500,000 incl.entire State of La
2.	Atchafalaya River	C of E, NOD	1956	N	Chan. 12 ft. x 125 ft. Miss. R. via Old R. & Atchafalaya R. to Morgan City, La. Cost $303,500.
3.	Atchafalaya River, Morgan City to Gulf of Mexico	C of E, NOD	1914	N	Chan. 20 ft. x 200 ft. x 15.75 mi. extends to 20 ft. contour in Gulf of Mexico. Total costs $501,963 const. & $4,332,200 maintenance.
4.	Bayou Plaquemine Brule', La.	C of E, NOD	1915	N	Chan. 6 ft. x 60 ft. fm mouth to mi. 19. Cost $33,410. 1970 traffic, 1,549,279 ton miles.
5.	Bayou Queue De Tortue, La.	C of E, NOD	1923	N	Removal of obstructions & dredging 10 cutoffs. Length of improvement, 14 mi. Cost $33,355. No commerce reported in 1970.
6.	Bayou Teche, La.	C of E, NOD	66&	N	Chan., varying width & depth, length 106.5 mi. 45 ft. wide floodgates in Wax Lake outlet levees. Floodgates complete for $1,320,000. 1970 traffic, 32,428,314 ton miles.
7.	Bayou Teche & Vermilion River, La.	C of E, NOD	1957	N, FC, I, R, F&W	Chan. 8 ft. x 80 ft. Vermilion Bay to GIWW, 9 ft. x 100 ft. to Lafayette, La.; other FC improvements, addition of crest gates on Keystone Dam & Control Works by local interests in Ruth Canal. See project map index for flood control. Traffic was 14,945,993 ton miles in 1970.
8.	Big Pigeon & Little Pigeon Bayous, La.	C of E, NOD	1934	N (inactive)	Removal of obstructions for entire lengths. Cost $37,669. Traffic in 1970 was 1,758,608 ton miles.
9.	Calcasieu River & Pass, La.	C of E, NOD	1946, 1968	N	Chan., Gulf of Mexico, 42 ft. x 800 ft. to jettied chan. Between jetties 40-42 ft.x400 ft. Chan. 40 ft.x400 ft. to Lake Charles, enlargement of a mooring & a turning basin. Ext. of 35 ft.x250 ft. ship canal fm mi. 34.1 to mi. 36 w/turning basin. Chan. 12 ft.x200 ft. to Cameron, La., & salt water barrier. Cost $31,937,886. 1970 traffic, 302,597,838 ton miles.
10.	Freshwater Bayou, La.	C of E, NOD	1968	N	Chan. 12 ft.x125 ft. from GIWW to Gulf of Mexico. 84 ft.x600 ft.x16 ft. saltwater intrusion lock. Cost, 1 Jul 71, $7,132,300. 1970 traffic, 501,854 ton miles.
11.	Gulf Intracoastal Waterway between Apalachee Bay, Fla. & Mexican Border	C of E, NOD	61&	N	Within La., waterway 384.1 mi. long fm Lake Borgne Light No. 29 near mouth of Rigolets to Sabine R.; alternate rt fm Lake Borgne Light No. 29 & New Orleans via Rigolets, Lake Pontchartrain & Industrial Canal; alternate rt fm Morgan City, La. to Port Allen, La. Also incls Harvey, Vermilion & Calcasieu Locks. Cost through Jun 30, 1971, $62,688,103. 1970 traffic, 1,011,763,341 ton miles.
12.	Inland Waterway *Franklin to* Mermentau River, La.	C of E, NOD	1924	N	Chan. 5 ft. x 40 ft. fm Bayou Teche near Franklin to Mermentau R. with locks at Hanson Canal & Schooner Bayou. Cost $249,052. 1970 traffic, 36,883 ton miles.
13.	Lake Charles Deep Water Channel, La.	C of E, NOD	Complete	N (inactive)	Maintenance of 30 ft. x 125 ft. x 24.9 mi. Chan. const. by local int. between Calcasieu & Sabine Rivers. 1970 traffic, 930,400,651 ton miles.
14.	Lake Charles Port, La.	C of E, NOD	Complete	N	(See Calcasieu R. & Pass, La. for Fed. Proj.) Local int. improvements incl. deepwater chan. 35 ft. deep x 2-3 mi. long fm main ship canal to indus. park. Ext. planned. Tot. port area has 60 piers, wharves & docks. 1970 traffic, 16,697,672 tons.
15.	Mermentau River	C of E, NOD	1952	N, FC, I	Chan. imp. to provide 3,000 sq.ft. below LGL for floodways, saltwater intrusion strs. Enlargement of Schooner Bayou cutoff & North Prong to provide 6 ft. x 60 ft. navigation chan. Completed in 1952. See project map index for flood control. Traffic in 1970, 22,217,642 ton miles.
16.	Mermentau River, Bayous Nezpique, & Des Cannes, La.	C of E, NOD	Under constr.	N, R	Removal of obstructions to navigation for 71.5 *mi., Mermentau R.* Bayou Nezpique, lower 25 mi., & 8.5 mi. in Bayou Des Cannes. Imp. of Mud Lake Chan. Chan. 9 ft.x100 ft. on Mermentau R. fm GIWW to junction. Bayous Nezpique & Des Cannes completed 1949. Not started is realignment of Bayous Nezpique & Des Cannes to obtain 12 ft.x125 ft. chan. fm Highway 10 to Mermentau R.; realignment of Mermentau R. upstream of GIWW; bridge relocation. Cost thru Jun 30, 1971, for new work $245,229. Tot. cost of proj. modification, est. $5,991,000 Fed. 1970 traffic, 51,085,609 ton mi
17.	Petit Anse, Tigre & Carlin Bayous, La.	C of E, NOD	1962	F&W, R, N	Chan. 9 ft.x80 ft. in Bayou Petit Anse fm GIWW to N end Avery Island & in Bayou Carlin fm mouth to Lake Peigneur. Chan. 7 ft.x60 ft. in Avery Canal, mooring area in Bayou Carlin. Proj. was complete in 1962, cost $392,247. Traffic in 1970, 11,116,316 ton miles.
18.	Vermilion Lock, La. (replacement)	C of E, NOD	Not started	N	Replacement lock 75 ft.x1200 ft. w/depth over sill, 15 ft. below m.l.g. el. Est. cost $8,380,000 (1 Jul 71) Federal & $7,400 non-Fed. 1970 traffic 43,162,159 tons.
19.	Vinton Waterway, La.	C of E, NOD	Not started	N	Chan. 9 ft.x60 ft. in Vinton Drainage Canal fm Lake Charles to Vinton, La. No costs to date. 1970 traffic 57,010 ton miles.

LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

NAVIGATION

WRPA 9

FIGURE 50

RECREATION
AND
FISH AND WILDLIFE

General

Water Resource Planning Area 9 encompasses the Louisiana coastal area from the east limits of the Atchafalaya Floodway to the Sabine River. The land types in the WRPA are cutover pine uplands, prairie, coastal marsh, and alluvial plain of the Atchafalaya Basin.

Recreation

WRPA 9 has 23,296 acres of land available for outdoor recreation, including 8,000 acres Federally owned, 5,499 acres owned by State government, 7,181 acres of county and quasipublic lands, and 1,610 acres of municipal, local government and school board lands. Additionally, there are 1,006 acres in private ownership.

Suitable for recreation in WRPA 9 are 399,529 acres of slack water and about 928 miles of stream. Developed recreation facilities include 39 acres for camping, 292 acres for picnicking, 370 acres for playing outdoor sports and games, 324 acres for swimming, and 108 acres for boat ramps.

Camping at Longfellow-Evangeline State Park, St. Martinville.

Fish and Wildlife

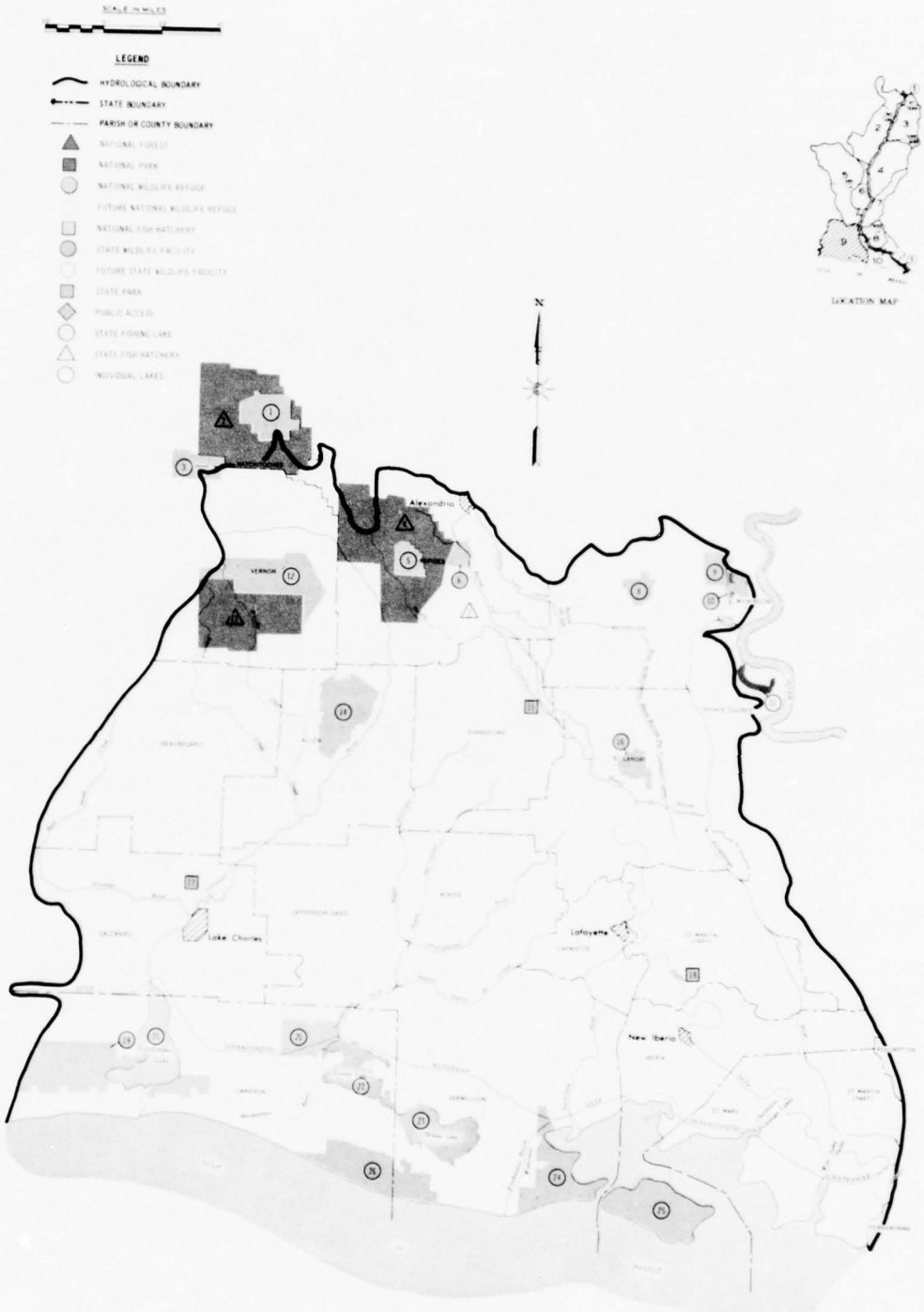
WRPA 9 water-related fish and wildlife resources include 138,000 acres of lakes between two and 40 acres in size, 400,000 acres of lakes larger than 40 acres in size, 928 miles of fishable streams, 3,442,000 acres of forest land, and 1,236,000 acres of wetland. Ponds under two acres in size have not been inventoried. Included in the lake acreage figures are numerous large coastal lakes. WRPA 9 water-related fish and wildlife facilities include State ownership of 10 wildlife management areas, two parks, and three refuges. Federally owned facilities include two waterfowl refuges, and a multi-divisioned national forest. Numerous private hunting and fishing clubs exist but have not been inventoried. All areas are capable of supporting wildlife-oriented recreation consisting of nature study and photography. Such use is nonconsumptive within certain limits.

Freshwater fishing demand totaled 2,961,000 angler-days. However, habitat to supply the stream fishing demand was only capable of supplying 74 percent of the need. The demand for waterfowl hunting totaled 98,000 hunter-days with wetland habitat for waterfowl hunting in sufficient quantities through the year 2020. Demand for wildlife-oriented recreation totaled 382,000 user-days. All demand figures are expressed for area residents in the year 1970.

PROJECT MAP INDEX
Recreation, Fish, and Wildlife Facilities - WRPA 9

Map Location No.:	Name of Project	Agency	Project Use	Description 1/
6.	Alexander Forest Wildlife Management Area	La. Wildlife & Fisheries Comm.	R, F&W	Moderate F&W rating. 7,875 acres. Insignificant waterfowl use. Recent reservoir will provide fishing.
7.	Beechwood State Fish Hatchery	La. Wildlife & Fisheries Comm.	F&W	High F&W rating. State warmwater fish hatchery.
21.	Calcasieu Lake		R, F&W	High F&W rating. 42,880 acres. Coastal lake. High value to fish and waterfowl. Major nursery area for estuarine species.
15.	Chicot State Park	La. State Parks & Rec. Comm.	R, F&W	6,400 acres. High fishing & WOR use. Rec. facs. incl. camping, (cabins, tent-trailer), picnicking, and boating.
5.	Evangeline Wildlife Management Area	La. Wild Life & Fisheries Comm.	F&W	Moderate F&W rating. 14,300 acres. No waterfowl or fishing available.
12.	Fort Polk Wildlife Management Area	La. Wild Life & Fisheries Comm.	F&W	Moderate F&W rating. 113,000 acres. No waterfowl or fishing available.
22.	Grand Lake		R, F&W	High F&W rating. 40,960 acres. Coastal lake. High waterfowl use. High fishing use.
9.	Grassy Lake Public Shooting Area	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 11,800 acres. High waterfowl & fishing use.
4.	Kisatchie National Forest, Evangeline Division	U. S. Forest Service	R, F&W	Moderate F&W rating. Fair fishing. Insignificant waterfowl use. Approximately 30,000 acres. 2 recreation areas for camping (41 units), picnicking (27 units), fishing, boating, & swimming.
2.	Kisatchie National Forest, Kisatchie Division	U. S. Forest Service	R, F&W	Moderate F&W rating. Small amounts of fishing. No waterfowl use. Approximately 30,000 acres.
13.	Kisatchie National Forest, Vernon Division	U. S. Forest Service	R, F&W	Moderate F&W rating. Small amounts of fishing. No waterfowl use. Approximately 25,000 acres. 1 recreation area for camping (8 units), picnicking (8 units), fishing, & boating.
20.	Lacassine National Wildlife Refuge	U. S. Fish & Wildlife Svc	F&W	High F&W rating. 31,700 acres. High value waterfowl refuge. Excellent sport fishing in pools.
18.	Longfellow-Evangeline State Park	La. State Parks & Rec. Comm.	R, F&W	157 acres. High WOR use. No fishing or hunting. Rec. facs. incl. camping, picnicking, boating, swimming, and an Acadian museum.
25.	Marsh Island State Refuge	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 79,000-acre waterfowl refuge. Limited access.
11.	Old River Lake		R, F&W	High F&W rating. 4,160 ac. Miss.R. oxbow. High fish & waterfowl use.
3.	Peason Ridge Wildlife Management Area	La. Wild Life & Fisheries Comm.	F&W	Moderate F&W rating. 33,000 ac. Insignificant waterfowl & fishing.
24.	Rainey & State Wildlife Refuge	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 30,000 ac. High value waterfowl refuge. Limited access.
1.	Red Dirt Wildlife Management Area	La. Wild Life & Fisheries Comm.	F&W	Moderate F&W rating. 38,300 acres. Insignificant waterfowl & fish.
26.	Rockefeller State Wildlife Refuge	La. Wild Life & Fisheries Comm.	F&W	High value F&W rating. 86,000 acres. High value waterfowl refuge. Good fishing usage.
19.	Sabine National Wildlife Refuge	U. S. Fish & Wildlife Service	F&W	High F&W rating. 142,845 acres. High value waterfowl refuge. Excellent sport fishing. Alligators abundant. High WOR use.
17.	Sam Houston State Park	La. State Parks & Rec. Comm.	R	1,068 acres. Rec. facs. incl. camping, picnicking, boating, & nature trails.
8.	Spring Bayou Wildlife Management Area	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 11,237 acres. Waterfowl hunting & fishing.
16.	Thistlethwaite Wildlife Management Area	La. Wild Life & Fisheries Comm.	F&W	Moderate F&W rating. 11,200 acres. No waterfowl hunting or fishing.
10.	Three Rivers Wildlife Management Area	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 12,928 acres. Good waterfowl hunting & fishing.
14.	West Bay Wildlife Management Area	La. Wild Life & Fisheries Comm.	F&W	Moderate F&W rating. 57,575 acres. No waterfowl hunting or fishing.
23.	White Lake		F&W	High F&W rating. 51,840 acres. High fish and waterfowl value. Highly important to estuarine species.

1/ WOR = Wildlife oriented recreation
F&W = Fish and wildlife
F&W* = Supplies only nonconsumptive fish and wildlife oriented recreation



LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

RECREATION AND FISH AND WILDLIFE

WRPA 9

FIGURE 51

POWER

At the end of 1970 there were three private and five public steam-electric generating plants in the area with total installed capacity of 1,888.8 megawatts and with total net generation of 6,982,903,000 kilowatt-hours for the year. Plans for increased capacity have been undertaken at two of these plants since 1970. Two of the plants employ the once-through method of cooling, with water being drawn from bayous. The others resort to cooling towers and draw make-up water from city water supply or company wells.

Interconnected transmission and distribution facilities assure adequate electric power for the area. Industrial generating plants include more than 300 kilowatts of generating capacity.

PROJECT MAP INDEX
Power Plants - WRPA 9

Map Location No.	Name of Plant	Owner of Plant	Type of Plant	Type of Water Supply	River	Installed Capacity (31 Dec 70) (MW)	Annual 1970 Production	Remarks
			Existing					
1.	Plant No. 1	City of Alexandria, La.	S	Wells		21.5	1,441.0	
2.	D. G. Hunter	City of Alexandria, La.	S	Wells		97.5	292,767.0	
3.	Coughlin	Central La. Electric Co.	S	Bayou Cocodrie		488.3	2,152,903.0	
4.	Opelousas	City of Opelousas, La.	S	Opelousas City Water		38.7 1/	71,610.0	
5.	Roy S. Nelson	Gulf States Utilities	S	Wells		982.3	3,427,071.0	
6.	Rodemacher	City of Lafayette, La.	S	Lafayette City Water		42.7 2/	117,237.0	
7.	Doc Bonin	City of Lafayette, La.	S	Lafayette City Water		145.4	293,718.0	
8.	Teche	Central La. Electric Co.	S	Bayou Teche		79.4	536,156.0	

1/ Plant has 12.0-MW internal combustion auxiliary unit.

2/ Plant has 2.8-MW internal combustion auxiliary unit.

Map Location No.	Name of Plant	Owner of Plant	Type of Plant	Type of Water Supply	River	Installed Capacity (MW)	Date
			Planned Additions				
2.	D. G. Hunter	City of Alexandria, La.	S	Wells		85.0	November 1973
8.	Teche	Central La. Electric Co.	S	Bayou Teche		348.5	March 1971

LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

POWER

WRPA 9

FIGURE 52

WATER SUPPLY
AND
SEWAGE TREATMENT

General

Water Resources Planning Area (WRPA) 9 covers all or part of 16 parishes in southwest Louisiana. Because data herein is available only on a county wide basis, hydrologic boundaries have been adjusted to conform to county lines. Sixteen parishes fall within these boundaries and are considered in municipal, industrial, and agricultural water use and sewage treatment data collection. These parishes have been further subdivided into seven subareas.

In 1970, within WRPA 9, 2867.6 MGD was required to meet the municipal, industrial, and agricultural water withdrawal requirements. Of this, 35.5 percent was supplied by groundwater sources. Groundwater withdrawals accounted for 90 percent of the municipal water used, 18.2 percent of the industrial water used, and 47.9 percent of the agricultural water used.

In addition to existing facilities, Congress authorized by the Flood Control Act of 1966 a project entitled "Teche-Vermilion Basins, Louisiana." This project provides for the diversion of supplemental water from the Atchafalaya River upstream of Krotz Springs to Bayou Courtableau just west of the West Atchafalaya Basin protection levee (WABPL) for municipal, industrial, irrigation, and water quality control uses in Bayou Teche, Vermilion River, and along the West Atchafalaya Basin protection levee.

The initial improvements are to be constructed by the Federal Government at an estimated Federal cost of $9,880,000. The non-Federal cost is $56,000. The improvements include a 1,050 c.f.s. pumping station at the Atchafalaya River; a leveed conveyance channel with an inverted siphon under Bayou Darbonne; a control structure through the WABPL; and three downstream control structures--a culvert between Bayou Courtableau and the WABPL borrow pit to the south, a weir in Bayou Fusilier, and a navigable gate in Loreauville Canal.

The three new control structures and the existing non-Federal Ruth Canal control structure are to be operated to distribute the supplementary water supply as needed. Operation and maintenance of the completed works and expansion of the pumping station to 1,300 c.f.s. when required will be the responsibility of non-Federal interests. Planning began in 1968, and construction is scheduled to begin in 1975.

Sewage treatment was provided in 36 percent of the communities and serviced 73.4 percent of the population which utilized the area's municipal water distribution system in 1970. The remaining 26.6 percent of the municipally serviced population utilized septic tanks or their sewage was disposed untreated.

1970 Municipal Water Supply

In 1970, municipal water systems within the WRPA serviced 124 communities, which had a combined population of 542,206 people, and varied in size from 85 people at Jefferson Island, La., to almost 77,998 people in Lake Charles, La. The average daily municipal water withdrawal within the WRPA was 72.0 MGD. During June, the peak municipal water use month in 1970, the average daily use was 79.1 MGD. This water was supplied 90 percent from groundwater sources. The average daily withdrawals resulted in a 133 GPCD use in areas serviced by central water systems. This compares with a national average of 166 GPCD.

1970 Industrial Water Supply

Industrial activity with WRPA 9 during 1970 required a daily average water withdrawal of 1301.32 MGD. Groundwater supplied 18.3 percent of this withdrawal, surface sources supplied three percent and brackish water supplied 78.7 percent.

1970 Agricultural Water Supply

In addition to the municipal and industrial water withdrawals, agricultural withdrawals required 1487.3 MGD for use in the irrigation of 507,135 acres and 6.8 MGD for use in livestock and poultry raising in 1970. Of the water used, 51 and 49 percent was supplied from groundwater and surface water sources, respectively.

1970 Sewage Treatment Facilities

Primary and secondary treatment was provided in 46 of the communities that utilized a municipal water distribution system in 1970. These treatment facilities provided service for 421,970 people. There were, however, 26 communities with populations over 1,000 that did not provide any centralized sewage treatment.

PROJECT MAP INDEX

Municipal, Industrial, and Agricultural Water Supply and Sewage Treatment Facilities - WRPA 9

Subarea / County	Population	Municipal Water Use 1/				Industrial Water Use 1/				Agricultural Water Use 1/			Sewage Treatment Facilities					
		No. systems	Withdrawal (MGD)			Withdrawal (MGD)				Withdrawal (MGD)			Secondary Treatment		Primary Treatment		No Treatment 2/	
			Ground	Surface	Total	Ground	Surface	Brackish	Total	Ground	Surface	Total	Number Plants	Population Serviced	Number Plants	Population Serviced	Number Communities	Population
9-1						31.2			31.2	41.6	45.1	86.7						
Allen	11,969	4	1.5		1.5								3	11,465				
Beauregard	8,555	3	2.6		2.6								1	8,030				
Vernon	10,670	5	1.8		1.8								2	23,555				
9-2						154.1		954.3	1108.4	96.1	104.1	200.2						
Calcasieu	142,047	24	17.2		17.2								7	105,969			2	3,052
9-3						5.3	1.8	.2	7.3	182.3	197.4	379.7						
Cameron	1,750	2	.7		.7													
Vermilion	22,844	7	2.7		2.7								3	18,520			1	2,024
9-4						9.2	.02		9.22	339.9	368.3	708.2						
Acadia	33,460	9	2.9		2.9								4	30,750				
Evangeline	16,006	5	1.5		1.5								2	12,967			1	1,779
Jefferson Davis	20,310	5	1.5		1.5								3	18,537			1	1,598
9-5						23.2	33.9	69.8	126.9	43.1	46.6	89.7						
Iberia	39,382	9	4.7		4.7								3	38,444				
St. Landry	43,277	9	5.0		5.0								5	36,992			4	6,285
St. Mary	27,324	7	.1	5.1	5.2								3	15,851			3	25,875
St. Martin	14,165	4	1.1		1.1								2	12,095				
9-6						.9	3.7		4.6	14.1	15.5	29.6						
Lafayette	85,311	11	10.2		10.2								3	71,949			3	4,503
9-7						13.9			13.9									
Avoyelles	18,758	10	1.5		1.5								3	11,613			2	3,873
Rapides	46,378	10	9.9	2.1	12.0								2	5,233			9	64,708
Total	542,206	124	64.8	7.2	72.0	237.8	39.42	1024.3	1301.52	717.1	777.0	1494.1	46	421,970			26	113,697

1/ All figures are daily averages.

2/ Only denotes communities of 1,000 or greater population.

LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

MUNICIPAL, INDUSTRIAL, AND AGRICULTURAL WATER SUPPLY

WRPA 9

FIGURE 53

ARCHEOLOGY AND HISTORY

There are a total of 140 archeological sites on record for WRPA 9 of which 83 are so little known that no cultural identification can be provided. Those identified date from approximately 12,000 years ago up to the time Europeans entered the area. Only about half a dozen sites in the entire area have been even partially excavated. One site, the Marksville, is now the property of the State, and therefore protected, but the potential for gaining information on human adaptation to marsh land environment is so great that provision must be made to protect, survey, and excavate other sites before they are destroyed.

Sites identified in this WRPA total 140: 1 historic, 12 Mississippian, 43 woodland, 1 archaic, and 83 unknown. Figure 54 shows the number of sites occupied during each period by parish. Since some of the sites have been occupied during more than one period, the number of sites shown on the figure do not agree with those above.

This area is the heart of "Cajun" territory, settled by the Acadians, who first settled in the British seaboard colonies, then were exiled from Nova Scotia because of their religious beliefs and migrated to Louisiana. The culture of much of WRPA 9 and WRPA 10 is strongly influenced by these hardy people. The early Spanish and French explorers knew the area well, and developed heavily used trails or "roads" through the area from settlement to settlement, which were later used by the Americans. The bayous, marshes, and swamps of the Louisiana coastal plains were a productive, but all too frequently, hostile environment for historic and prehistoric man, yet evidence of his use and habitation in the area is continuous over the past centuries.

Most of the aesthetic charm of the area, if one can see it, relates to the bayous, waterways of various types, and the coastal marshlands which are the habitat of a myriad of types of birds and other forms of wildlife.

PROJECT INDEX
Historic Sites - WRPA-9

Map No.	Name		Description
5	Acadian House St. Martin Parish, Louisiana	NR	Located in Longfellow State Park. Three connecting buildings built in 1765. Main house of hand-hewn cypress with wooden pegs.
T-19	Bienville and d'Iberville Trails Two Parishes, Louisiana		Early trails developed by the two French explorers.
8	Darby Plantation Iberia Parish, Louisiana	NR	North of New Iberia on Darby Lane. Early Louisiana French-style unique "brick between post" structure.
T-31	Iberia to Morgan City Trail Three Parishes, Louisiana		Route of commerce and travel--18th century trail.
10	Jefferson, Joseph, House Iberia Parish, Louisiana	NR	Located north of Delcambre at Jefferson Island. House built in 1870 by actor Jefferson who portrayed Rip Van Winkle. Island was former retreat of infamous pirate Jean Lafitte.
1	Kent Plantation House Rapides Parish, Louisiana	NR	Oldest remaining structure in central Louisiana. Creole-style house. West of Alexandria on Bayou Rapides.
T-30	Lake Charles to Iberia Trail Five Parishes, Louisiana		Route of commerce and travel--18th century trail.
T-28	Lake Charles to Opelousas Trail Five Parishes, Louisiana		Route of commerce and travel--18th century trail.
4	Longfellow-Evangeline State Park St. Martin Parish, Louisiana		Commemorates historic migration of the cajuns into Louisiana.
3	Marksville Prehistoric Indian Site Avoyelles Parish, Louisiana	NR	Part of State monument near Marksville. A Woodland Period site.
11	Oaklawn Manor St. Mary Parish, Louisiana	NR	Located 2 miles northeast of Franklin. Greek Colonial plantation home built in 1837.
2	Old LSU Site Rapides Parish, Louisiana	NR	Located north of Pineville in Kisatchel National Forest. Original 518-acre site housed the Louisiana Seminar of Learning and Military Academy. Built in 1859.
T-27	Opelousas to Baton Rouge Trail Two Parishes, Louisiana		Route of commerce and travel--18th century trail.
T-29	Opelousas to Iberia Trail Three Parishes, Louisiana		Route of commerce and travel--18th century trail.
T-20	Opelousas to Natchitoches Trail Three Parishes, Louisiana		Route of commerce and travel--18th century trail.
T-21	Opelousas to Rapides Trail Three Parishes, Louisiana		Route of commerce and travel--18th century trail.
T-22	Opelousas to Texas Trail Four Parishes, Louisiana		Route of commerce and travel--18th century trail.
6	St. Martin of Tours Catholic Church St. Martin Parish, Louisiana	NR	Parish founded by Acadian exiles in 1765. Church built in 1844. Located at 133 S. Main Street, St. Martinsville.
9	Shadows-on-the-Teche Iberia Parish, Louisiana	NR	Two-storied porticoed mansion with eight Tuscan columns. Located on East Main Street in New Iberia. Built in 1831.
7	U.S. Post Office St. Martin Parish, Louisiana	NR	Located corner of Main and Port Streets, St. Martinsville. Originally a residence built in 1876. Converted to Post Office in late 1930's.

(NR--This site is on the National Register of Historic Places)
(NP--National Park)

LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

HISTORIC AND ARCHEOLOGICAL SITES

WRPA 9

FIGURE 54

WRPA 10

W R P A 10

GENERAL

Area of Study

WRPA 10 covers 7,729 square miles in southeast Louisiana, and accounts for eight percent of the total area in the region. The Mississippi River (WRPA 1) divides WRPA 10 into two portions. The portion east of the Mississippi River is divided by Lake Pontchartrain into areas north and south of the lake. The area north of Lake Pontchartrain is bounded by the Pearl River Basin on the north and east, the Tangipahoa River basin on the west, and the lake on the south. The area south of Lake Pontchartrain is bounded by Lake Pontchartrain, Lake Borgne, and the Mississippi Sound on the north, the Gulf of Mexico on the east, and the east bank Mississippi River levee and Gulf of Mexico on the west and south. The area west of the Mississippi River lies south of the latitude of White Castle, Louisiana, between the west bank Mississippi River levee and the east Atchafalaya Basin protection levee. The terrain of the area north of Lake Pontchartrain is composed of rolling hills and alluvial lowlands with a fringe of tidal marsh adjacent to Lake Pontchartrain. The area west of the Mississippi River and the area south of Lake Pontchartrain lie in the deltaic plain of the Mississippi River. These areas contain numerous marshes, lakes, and bays in the lower portion and swamps and lakes in the upper portion. The principal streams in the area are Bayou Lafourche and Chefuncta River.

New Orleans is the major city in the area. Other principal cities include Gretna, Houma, and Thibodaux, Louisiana. Approximately 21 percent of the 1970 Lower Mississippi Region population, or 1,308,774 people resided in the 11 parishes that comprise WRPA 10. The 1970 urban population, as a percent of the total 1970 population, was 83 percent. Economic activities important to the area include mineral production, petroleum and chemical processing, agriculture, processing of food products, waterborne commerce, harvesting and processing of forest products, fur trapping, and service industries. The production, processing, and transportation of minerals has been a major factor in the area's development. Oil, natural gas, salt, sulphur, sand and gravel, and shell are the important minerals produced. Manufacturing is another major factor in the area's economy.

Hydrologic Characteristics

The majority of WRPA 10 is influenced by tides due to its proximity to the Gulf of Mexico. Major hurricanes may raise the gulf as much as 12 feet above mean sea level (m.s.l.), and during the winter, strong northerly winds depress the water surface as much as two feet below m.s.l.

The area south of Lake Pontchartrain was formed by seven major Mississippi River delta complexes. From oldest to youngest, the delta complexes are: Sale, Cypremort, Cocodrie, Teche, St. Bernard, Lafourche, Plaquemine, and the present, Balize. This area is composed of complex intertwining tidal channels and irregular water bodies. The major waterways are: Gulf Intracoastal Waterway (GIWW), a 12x150-foot navigation channel from Lake Borgne to the Inner Harbor Navigation Canal in New Orleans, and a 12x125-foot channel from mile 15 of the GIWW to the Gulf of Mexico, a distance of about 35.5 miles; Mississippi River-Gulf Outlet, a 36x500-foot ship channel extending approximately 76 miles in a land and water cut from the junction of the Inner Harbor Navigation Canal and the GIWW in New Orleans to the -38 foot contour in the gulf; Bayou Lafourche and Lafourche-Jump Waterway, a 6x60-foot channel from Napoleonville to Golden Meadow, and a 12x125-foot channel from Leeville to the gulf, a distance of about 108 miles; and Houma Navigation Canal, a 15x150-foot canal from the GIWW near the western edge of Houma to the Gulf of Mexico.

North of Lake Pontchartrain, WRPA 10 consists only of the Chefuncta River Basin. The Chefuncta River has its source in northeast Tangipahoa Parish and flows southward for about 50 miles to discharge into Lake Pontchartrain. The Chefuncta River has a project channel of 10x125-foot from the 10-foot depth in Lake Pontchartrain to mile 3.5, and 8-foot depth over an unspecified bottom width from mile 3.5 to about mile 10.7.

Atchafalaya Basin, Louisiana

Descriptions of major features of this project are contained in WRPA 9. A drainage feature of the East Atchafalaya Basin protection levee, which is located in WRPA 10, is described below.

East Atchafalaya Basin Protection Levee Landside Drainage Improvements. Bayou Boeuf-Bayou Long Drainage Canal and Enlargement of Bayou Chene. This consists of the improvement of existing streams along the landside of the East Atchafalaya Basin protection levee from the Bayou Sorrel Lock to the vicinity of Lake Palourde, a new land cut around the east side of Lake Palourde to Bayou Boeuf, and the enlargement of Bayou Boeuf to provide a minimum channel of 9 feet by 100 feet for drainage and navigation from the Intracoastal Waterway to the levee borrow pit. The improvements were completed in 1947 at a cost of $510,000.

Bayou Boeuf Lock on the Gulf Intracoastal Waterway permits uninterrupted navigation through the levee system which protects areas and communities east of Morgan City from floodwaters in the Atchafalaya Basin.

Baker Canal Watershed, Louisiana

Located in Assumption Parish, La., this 21,600-acre project was authorized in 1959. The main project features are: (1) 4,093 acres of land treatment measures costing an estimated $81,692, and (2) 10 miles of channel improvement. The total estimated project costs are $154,491 ($32,221 Federal and $122,270 non-Federal). Floodplain lands benefited are 15,200 acres. Total annual damages prevented are $48,810; total annual benefits are $66,670. The benefit-cost ratio is 6.1 to 1. The project is complete.

Bayou Folse Watershed, Louisiana

Located in Lafourche Parish, La., this 52,214-acre project was authorized in 1962. The main project features are: (1) 16,599 acres of land treatment measures costing an estimated $342,300, (2) 20 miles of channel improvement, and (3) 36.2 miles of levee improvement. The total estimated project costs are $980,265 ($391,930 Federal and $588,335 non-Federal). Floodplain lands benefited are 24,730 acres. Total annual damages prevented are $61,830; total annual benefits are $132,519. The benefit-cost ratio is 1.7 to 1. The project is 65 percent complete.

Bonnet Carre' Spillway, Louisiana

The Bonnet Carre' Spillway was authorized under the Jadwin Plan, approved by the Flood Control Act of May 15, 1928 and amendments. It is an integral part of the comprehensive plan for flood control in the Mississippi Valley.

The project, which was completed in 1935 at a cost of $14,212,200, was designed to divert floodwaters from the Mississippi to Lake Pontchartrain whenever the flow in the Mississippi exceeds the safe capacity of the leveed river channel at and below New Orleans.

The diversion project consists of a reinforced concrete control structure located in the riverbank, and 11.6 miles of guide levees extending on both sides of the floodway about 5.7 miles from the river to the lake. These levees, averaging about 19 feet in height, form a floodway, flaring from 7,700 feet in width at the river end, to about 12,400 feet some 3.5 miles from the river, beyond which point the width is constant to the lake.

The overflow weir is of reinforced concrete construction. The structure consists of 350 individual bays for controlling the flow. Each bay is 20 feet wide and is equipped with movable timber needles, 8 by 11-1/2 inches in cross section. In 174 bays, the weir crest is at elevation 16 feet above mean sea level (m.s.l.); in the remaining

bays, it is 2 feet higher. The timber needles are set in place and removed by two operating cranes which ride on a service bridge crossing the control structure.

The spillway and floodway have a design capacity of 250,000 cubic feet per second (c.f.s.) and are operated to prohibit the river stage on the Carrollton gage in New Orleans from exceeding 20 feet, a stage about 5 feet below levee grade.

Bonnet Carre' Spillway, a major component in the master plan for flood control in the Lower Mississippi Valley, ensures the safety of New Orleans and the delta area below during major floods on the Lower Mississippi.

Grand Isle, Louisiana and Vicinity
Hurricane Protection

The Grand Isle and Vicinity Hurricane Protection project was authorized by the Flood Control Act of October 27, 1965, House Document 184, 89th Congress, Public Law 89-298.

The project provides for protection against flood waters from hurricanes with a loop levee approximately 36 miles in length along both banks of Bayou Lafourche from Golden Meadow to Larose, enlargement of 3 miles of existing levee at Golden Meadow, two floodgates for navigation and hurricane protection in Bayou Lafourche at upper and lower bayou crossings, approximately 8 miles of low interior levees to regulate intercepted drainage and seven multibarreled culverts controlled by flap gates.

Planning on the project is well underway and construction will begin as soon as construction funds are made available.

Non-Federal interests are required to bear $4,460,000 of the total $14,860,000 project cost. Federal cost is $10,400,000.

The project, when completed, will prevent flood damages on 1,200 acres of residential and commercial land and 4,770 acres of agricultural land. The project will benefit a total of 30,000 acres. Average annual flood control benefits are estimated at $865,400. A high degree of protection against storm tides and hurricane flood waters will be afforded the area.

Harvey Canal - Bayou Barataria Levee
Jefferson Parish, Louisiana

The Harvey Canal-Bayou Barataria Levee project was authorized under Section 205 of Public Law 858, 80th Congress, 2d Session and the Flood Control Act approved June 30, 1948, as amended. The project provides for construction of 9.2 miles of earthen levee from Roussell Pumping Station (mile 1.8 Harvey Canal) to La. State Highway No. 45 at Crown Point, La. (mile 10.5, Bayou Barataria) and excavation of three ditches to provide for intercepted drainage.

Two pumping plants are to be constructed having the following capacities:

(1)	Pumping Plant at Cousins Canal	- 2,500 c.f.s.
(2)	Pumping Plant at mile 10, Bayou Barataria	- 154 c.f.s.

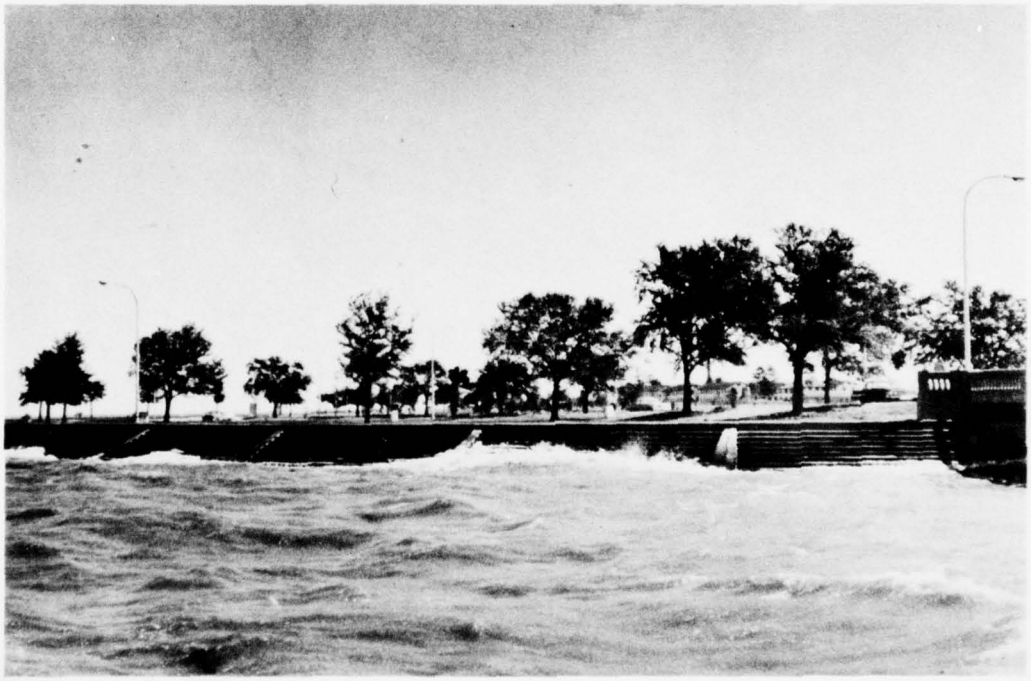
An existing pump, Estelle Pumping Plant, will be incorporated into the project with a capacity of 450 c.f.s.

The estimated cost of the project is $4,504,000 of which the maximum Federal participation is $1 million. To date, approximately $2,859,000 has been spent by local interests for relocations, pumping plant, and rights-of-way, while Federal expenditures have been $56,000 on engineering and design.

A total of 9,640 acres of cleared land will be protected by the project with average annual flood control benefits of $419,400. The project will provide a high degree of protection to the area.

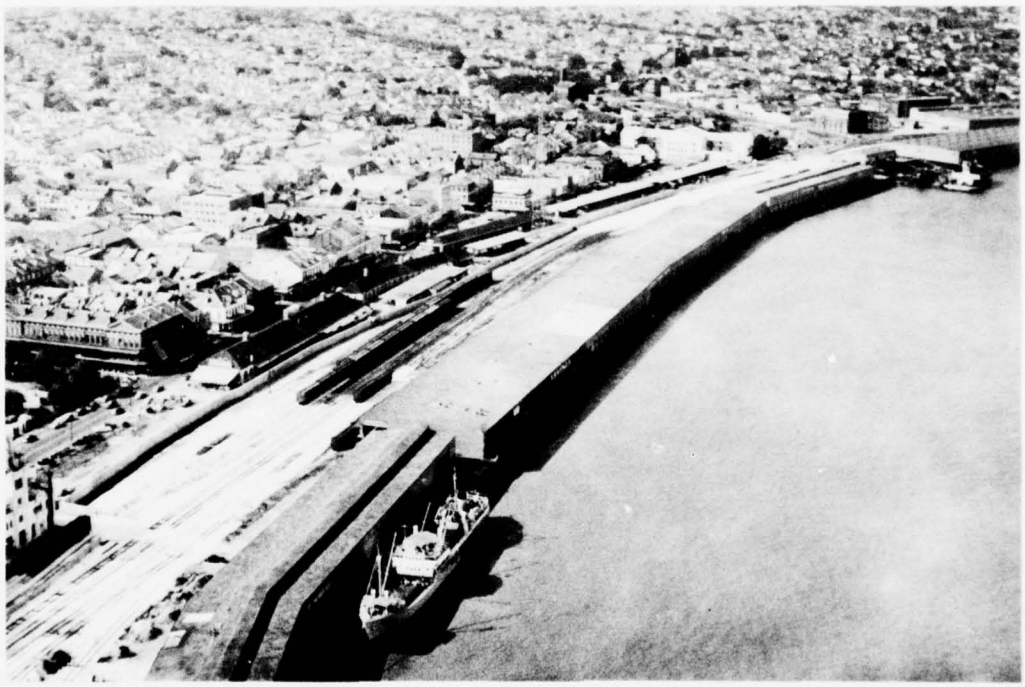
Lake Pontchartrain, Louisiana, and Vicinity Hurricane Protection

Resolutions of the U. S. Senate Committee on Public Works as adopted February 4, 1947 and January 28, 1949; River and Harbor Act approved May 2, 1945; Public Law 71, 84th Congress, 1st Session, approved June 15, 1955; and House Document 231, 89th Congress, 1st Session, Public Law 89-298 approved July 6, 1965, provide for construction of the Lake Pontchartrain barrier plan and the Chalmette area plan.



This seawall on Lake Pontchartrain in the city of New Orleans, along with the Lake Pontchartrain & Vicinity Hurricane Protection project, affords protection to the city of New Orleans from hurricane tides.

The Lake Pontchartrain barrier plan provides for construction of a barrier across the east end of Lake Pontchartrain to consist of a gated control structure and channels, navigation lock and channels, and closure dam at the Rigolets; a gated control structure and channels, navigable floodgate and channels, relocation of the Gulf Intracoastal Waterway (GIWW), and closure dam at the Chef Mentuer Pass; and a connecting barrier levee; construction of a lock and gated control structure at the lakeward terminus of the Inner Harbor Navigation Canal (IHNC) in the vicinity of Seabrook; a levee along the lakeshore of St. Charles Parish between the Bonnet Carre Spillway and the St. Charles-Jefferson Parish boundary and a drainage structure in the levee approximately 2 miles west of the parish boundary; improvement of existing levees along the lakeshore of Jefferson Parish and New Orleans; a new levee along the lakeshore of Citrus and New Orleans East; and improvement of existing protective works between South Point and the GIWW in the northeastern section of Orleans Parish, along the GIWW, Mississippi River-Gulf Outlet (MRGO), and the IHNC in Orleans Parish, and along the lakeshore of Mandeville, La.



The historically significant French Quarter in New Orleans is protected from Mississippi River flooding by Dumaine St. floodwall which separates the riverfront wharves and railway system.

The Chalmette area plan provides for constructing protective works consisting of floodwall along the east bank of the IHNC from the IHNC lock to Florida Avenue, thence levee along the south bank of the MRGO to a point approximately 6 miles southeast of Bayou Dupre, thence southwest to Verret, La., thence west, south of Highway No. 46 to the Mississippi River levee at Caernarvon, La., with navigable floodgates at Bayous Bienvenus and Dupre and a drainage structure in the vicinity of Creedmore Canal. Both plans provide for construction of 72 miles of new levees, 20 miles of floodwall, enlargement of 10 miles of levee, and construction of two navigation locks, three control structures, one navigation structure, two floodgates, and two drainage structures.

The project is about 14 percent complete with expenditures to date of $62,271,900. The project will cost an estimated $255 million, of which approximately $77,000,000 will be borne by non-Federal interests.

Essentially, complete protection will be provided to 151,050 acres, including 43,790 acres of urban development, 21,500 acres of open land, and 74,860 acres of woodland, swamp and low marsh. Average annual flood control benefits are estimated at $117,296,300.

Lake Pontchartrain Levees

The Lake Pontchartrain Levee project, authorized by the Flood Control Act of July 24, 1946, House Document 691, 79th Congress, 1st Session (Public Law 526, 79th Congress), provides for reconstruction and landside enlargement of existing lakeshore embankment across Jefferson Parish (with suitable erosion-protection works lakeward therefrom); also enlargement of return levees along Orleans and St. Charles Parish lines to prevent flanking.

The project was modified by the Flood Control Act of May 17, 1950, Senate Document 139, 81st Congress, 2d Session, by which the work was incorporated into the project, "Flood Control, Mississippi River and Tributaries." The modification provides for strengthening of existing embankment, increased erosion-protection works, suitable enlargement of return levees along Orleans and St. Charles Parish lines, and rehabilitation and improvement of the drainage facilities by the Fourth Jefferson Drainage District.

These levees protect about 50 square miles of residential and industrial development in Jefferson Parish from storm tides in Lake Pontchartrain. Completed in 1956, the project cost $8,303,110, including a cash contribution of $1,350,000 by local interests.

As of June 30, 1970, the project had prevented flood damages estimated at $349,800,000, including $21,800,000 for Hurricane Flossy (September 1956), $110 million for Hurricane Carla (September 1961), $98 million for Hurricane Hilda (October 1964), $70 million for Hurricane Betsy (September 1965), and $50 million for Hurricane Camille (August 1969).

The project includes construction of 10.2 miles of levee along the Lake Pontchartrain shoreline of Jefferson Parish; enlargement of 4.8 miles of levee along the Jefferson-St. Charles Parish line; and enlargement of 2.3 miles of the 17th Street Canal levee along the Jefferson-Orleans Parish line.

Louisiana Department of Public Works Projects

This section includes drainage systems authorized to be planned and constructed by the Department of Public Works on its own or in cooperation with Federal, State and local agencies engaged in such activities. Authorization is by Louisiana Revised Statutes of 1950, Title 38, Sections 1 through 17. Local agencies include Police Juries, Drainage Districts, Levee Districts, and other legally constituted districts or agencies. Federal agencies are the Soil Conservation Service, U. S. Department of Agriculture, and the Corps of Engineers, U. S. Army.

The projects are local undertakings with Federal and state assistance. Division of costs in parish-wide systems constructed in the period 1942 to about 1960 was 60 percent of cost contributed by local agency and 40 percent of cost plus engineering, planning and construction supervision by the Louisiana Department of Public Works.

Principal improvement works consist of parish-wide planning of drainage systems to provide land drainage and protection against floods to agricultural, residential, business and industrial areas and sites. Improvements also include major drainage streams which serve as an outlet for two or more drainage districts or parish drainage systems.

Work within WRPA 10 includes 1,029 miles of channel improvements at a total cost of $8,019,026, two pumping plants at a cost $4,090,000, and a floodgate at Dugas Canal, $18,700. At Grand Isle, 1,050 linear feet of stone jetty and other wavewash protective works were constructed at a cost of $378,000 and 1,200,000 cubic yards of sand fill were placed at a cost of $833,300. Projects also include removal, relocation, and extension of the west jetty at Belle Pass at a cost of $101,400.

Mississippi River and Tributaries

(See WRPA 1)

Morgan City, Louisiana and Vicinity Hurricane Protection

The Morgan City and Vicinity Hurricane Protection project was authorized by Public Law 89-298, approved October 27, 1965, House Document No. 167, 89th Congress. Detailed planning on the project is in progress. Construction has not commenced.

Features of this project include the construction of 9.2 miles of new levees, enlargement of 21.6 miles of existing levees, construction of flap-gated drainage structures, and a floodgate, and alteration of six existing pumping stations and 11 drainage culverts. The six pumping plants have capacities as follows:

(1)	Bayou Yokley pumping plant	-	1060 c.f.s.
(2)	Franklin pumping plant	-	260 c.f.s.
(3)	Centerville pumping plant	-	330 c.f.s.
(4)	Maryland pumping plant	-	136 c.f.s.
(5)	North Bend pumping plant	-	50 c.f.s.
(6)	Wax Lake West pumping plant	-	500 c.f.s.

Essentially complete protection will be provided to 34,900 acres which consist of 4,800 acres occupied by improvements, 14,800 acres of agricultural lands, and 15,300 acres of woodland. Average annual flood control benefits are estimated at $979,600.

Estimated first cost is $7,970,000, including $5,241,000 for work in the Franklin and vicinity area. A cost of $2,490,000 is to be borne by non-Federal interests. Also, see Project Index for WRPA 9.

New Orleans to Venice, Louisiana Hurricane Protection

The New Orleans to Venice project was authorized by the Flood Control Act of October 23, 1962, House Document 550, 87th Congress, 2d Session.

The project consists of four independent reaches, namely:

Reach A	-	City Price to Tropical Bend, 13 miles
Reach B-1	-	Tropical Bend to Fort Jackson, 12 miles
Reach B-2	-	Fort Jackson to Venice, 9 miles
Reach C	-	Phoenix to Bohemia, 16 miles

The authorized project provides for 50 miles of hurricane-protection levees and one floodgate. An additional 34 miles of barrier levees on the east bank of the Mississippi River and the raising of 10 miles of the west bank Mississippi River levee to hurricane grade are being considered. Flood damages will be prevented over 2,920 acres of residential and commercial property with average annual flood control benefits of $4,024,000. A high degree of protection against storm tides and hurricane floodwaters will be afforded the area by the project. Total project costs are estimated at $53,700,000 consisting of $31,700,000 Federal funds and $22 million non-Federal funds. The project is about 18 percent complete.

Other Small Projects

Other small projects in WRPA 10 include 8.2 miles of channel improvement on Bayou L'Eau Bleau at a cost of $44,081, and 1.4 miles of channel improvement on Bayou Vincent at a cost of $13,000.

PROJECT MAP INDEX
Flood Control - WRPA 10

Map Location No.	Name of Project	Agency	Year Complete	Project Uses	Description 1/
	All Projects are in Louisiana				
6.	Baker Canal	SCS (566)	1961	FC	Proj. area, 21,600 ac. 10 mi. chan. imp. Cost $72,799. (L)
12.	Bayou Boeuf-Bayou Long Drainage Canal and	C of E, NOD	1947	FC, N	Drainage canal w/9 ft. min. depth by 100 ft. width by 32.0 mi. length. Cost $198,900.
	Bayou Chene	C of E, NOD	1947		Chan. enlarged to 9 ft. min. depth x 100 ft. width. 23.0 mi. length. Cost $311,100.
7.	Bayou Folse	SCS (566)	Est 1972	FC	Proj. area, 52,218 ac. 20 mi. chan. imp. (L) Est. cost $331,660. 36.2 mi. levee improvement, est. cost $506,505.
9.	Bayou L'Eau Bleau	C of E, NOD	1948	FC	8.2 mi. chan. imp. Cost $44,081.
2.	Bayou Vincent	C of E, NOD	1947	FC	1.4 mi. chan. imp. Cost $13,000.
3.	Bonne Carre Spillway & Floodway	C of E, NOD	1935	R,FC	11.4 mi. levee. 5.7 mi. floodway. 7000 ft.350-bay weir str. Cost $14,212,200.
10.	Larose to Golden Meadow Hurricane Protection	C of E, NOD	Not started	FC	3 mi. levee enlarge., 36 mi. new levee. 7 multibarreled flap-gated corrugated metal drg. str. 2 floodgates (56-ft. wide) w/sector gates. Est. cost (1 Jul 71) $14,860,000. (Non-Federal, $4,460,000).
5.	Harvey Canal-Bayou Barataria Levee	C of E, NOD	Under constr.	FC	9.2 mi. levee, pumping station (154 c.f.s.) to be built by local interests. Est. total cost (Jul 71) $4,504,000.
1.	Lake Pontchartrain & Vicinity Hurricane Protection	C of E, NOD	Under constr.	FC, N	Est. total costs $255,000,000. ($77,000,000 Non-Federal)
1-10.	Chalmette Area Levee System				1.5 mi. floodwall. 20 mi. levees. 2 reinforced conc. nav. floodgates w/56 ft. wide "U"-frame gate bays. Gated strs. for gap closures. Cost (1 Jul 71) $55,840,000.
1-11.	Chalmette Extension				15.3 mi. levees. 2 72-in. dia. drainage str. & gated strs. for gap closures. Cost (1 Jul 71) $26,500,000.
1- 8.	Chef Menteur Pass Complex				1200 ft. reinforced conc. control str. w/8 50 ft. wide bays & 6,650 ft. approach chan. 56 ft. wide reinforced conc. "U"-frame str. 2.3 mi. 125 ft. wide nav. chan. 1600 ft. hydraulic fill closure dam. Reloc. of 7 mi.GIWW & 4.6 mi. barrier levees. Cost (1 Jul 71) $30,158,000.
1- 7.	Citrus Levee & Floodwall System				6.7 mi. levee enlargement. 11.4 mi. floodwalls & gated strs. for gap closures. Cost (1 Jul 71) $30,090,000.
1- 1.	Mandeville Seawall in St. Tammany Parish				1 mi. of seawall strengthening. Cost (1 Jul 71) $450,000.
1- 5.	New Orleans East Levee System				6.5 mi. new levees. 15 mi. levee enlarge. 2 mi. floodwalls & gated strs. for gap closures. Cost (1 Jul 71) $34,087,000.
1- 3.	New Orleans Levee & Floodwall System				4.1 mi. levee enlarge. 5.3 mi. floodwall. Gated strs. for gap closures. Cost (1 Jul 71) $13,160,000.
1- 9.	Rigolets Control Structure, Closure Dam & Adjoining Levees				1,100 ft. reinforced conc. control str. w/16 50-ft. wide bays & 5585 ft. approach chan. 4675 ft. hydraulic-fill closure dam. 2.8 mi. barrier levees. Est. cost (1 Jul 71) $32,545,000.
1- 6.	Rigolets Lock & Adjoining Levees				84 x 800-ft. sector-gated nav. lock w/earthen chamber. .62 mi. 150-ft.-wide nav. chan. & 2.1 mi. barrier levees. Cost (1 Jul 71) $8,500,000.
1- 2.	St. Charles Parish Lakefront Levee				5.7 mi. new levee. Reinforced conc. drg. str. w/8 gatebays. Cost (1 Jul 71) $22,770,000.
1- 4.	Seabrook Complex				84x800-ft. sector-gated nav.lock. Reinforced conc. control str. w/3 gate bays 32 ft.wide. 800 ft. rock & shell dikes. Cost (1 Jul 71) $20,920,000
4.	Lake Pontchartrain Levees	C of E, NOD	1956	FC	10.2 mi. levees. 7.1 mi. levee enlarge. Cost $8,305,110.
15.	Louisiana Department of Public Works Projects			FC	
15- 5.	Assumption Parish Drainage		1971		Proj. area, 236,160 ac. 45-1/2 mi. chan. imp. Cost $344,254.
15- 7.	Back Line Levees along Mississippi River, Jefferson Parish		1971		Lafitte & Westwego Back Levees; Lake Pontchartrain & Lake Cataouatche Levees. Length, 15.6 mi.
15- 9.	Back Line Levees along Mississippi River, St. Bernard Parish		1971		East Violet Canal Levee & Parish Rd. to Verrett Levee. Length, 17 mi.
15-14.	Bayou Folse Levee, Lafourche Parish		1971		Loop levee 41 mi. in length.
15-18.	Belle Pass, Lafourche Parish		1958		Removal, relocation & ext. west jetty. Const of stone on timber mattress at cost of $101,400.
15-11.	Dugas Canal Floodgates, Lafourche Parish		1965		Floodgate in Dugas Canal for drainage and flood control. Cost $18,700.
15- 8.	Fortification & Meraux Pumping Plant, St. Bernard Parish		1971		Pumping plant & floodwall. Cost $3,650,000.
15-16.	Golden Meadow Levee & Pumping Plant, Lafourche Parish		1961		Ring levee & pumping plant. 5 mi. earthen levee. Pump. plant, 2-45,000 g.p.m. & 1-15,000 g.p.m. pumps. Cost $440,000.
15-17.	Grand Isle, Jefferson Parish		1959		Shoreline protection & restoration works. 1,200,000 cu.yds. sand will within eroded areas & exist. timber groins. Cost $835,300. 1,050 linear ft. stone jetty & other wavewash prot. works. Cost $378,000.
15-13.	Jefferson Parish Drainage		1971		Proj. area, 389,120 ac. 10 mi. chan. imp. Cost $148,383.
15-12.	Lafourche Parish Drainage		1971		Proj. area, 895,360 ac. 268 mi. chan. imp. Cost $1,342,489.
15- 2.	Orleans Parish Drainage		1971		Proj. area, 289,280 ac. 2 mi. chan. imp. Cost $137,127.
15-19.	Plaquemines Parish Drainage		1971		Proj. area, 1,271,040 ac. 26-1/2 mi. chan. imp. Cost $308,776.
15-10.	St. Bernard Parish Drainage		1971		Proj. area, 1,235,200 ac. 47-1/2 mi. chan. imp. Cost $426,291.

1/ Degree of protection indicated as follows: Low (L) 1 to 10 yr. frequency.
Medium (M) 10 to 50 yr. frequency.
High (H) 50 to 100 yr. frequency.

PROJECT MAP INDEX
Flood Control - WRPA 10 (continued)

Map Location No.	Name of Project	Agency	Year Complete	Project Uses	Description 1/
	All Projects are in Louisiana				
	Louisiana Department of Public Works Projects - continued			FC	
15- 6.	St. Charles Parish Drainage		1971		Proj. area, 249,600 ac. 47 mi. chan. imp. Cost $204,772.
15- 3.	St. James Parish Drainage		1971		Proj. area, 166,400 ac. 89 mi. chan. imp. Cost $466,102.
15- 4.	St. John the Baptist Parish Drainage		1971		Proj. area, 224,640 ac. 26 mi. chan. imp. Cost $115,607.
15- 1.	St. Tammany Parish Drainage		1971		Proj. area, 730,240 ac. 147-1/2 mi. chan. imp. Cost $432,353.
15-15.	Terrebonne Parish Drainage		1971		Proj. area, 1,211,520 ac. 320-1/2 mi. chan. imp. Cost $4,092,872.
8.	Morgan City Hurricane Protection	C of E, NOD	Under constr.	FC	9.2 mi. new levee. Lake Palourde drainage str. w/6-60-inch openings. Bayou Ramos drainage str. w/2 48-inch culverts. Bayou Boeuf drainage str. w/1 48-inch culvert. Cost (1 Jul 71) $7,970,000.
11.	New Orleans to Venice Hurricane Protection	C of E, NOD	Under constr.	FC	Cost (1 Jul 71) $53,700,000 ($22,000,000 non-Federal).
11- 2.	City Price to Empire Reach A				15 mi. levee. Modification of discharge pipes of 4 pump. stas. 4.2 mi. navigation chan. Cost (1 Jul 71) $15,097,000.
11- 3.	Empire to Venice Reach B				21 mi. levee. Modification of discharge pipes of 3 pump. stas. Flap-gated metal culvert w/2 48-in. barrels. Cost (1 Jul 71) $29,464,000.
11- 1.	Phoenix to Bohemia Reach C				16 mi. levee. 5 flap-gated culverts. Cost (1 Jul 71) $11,139,000.

1/ Degree of protection indicated as follows: Low (L) 1 to 10 yr. frequency.
Medium (M) 10 to 50 yr. frequency.
High (H) 50 to 100 yr. frequency.

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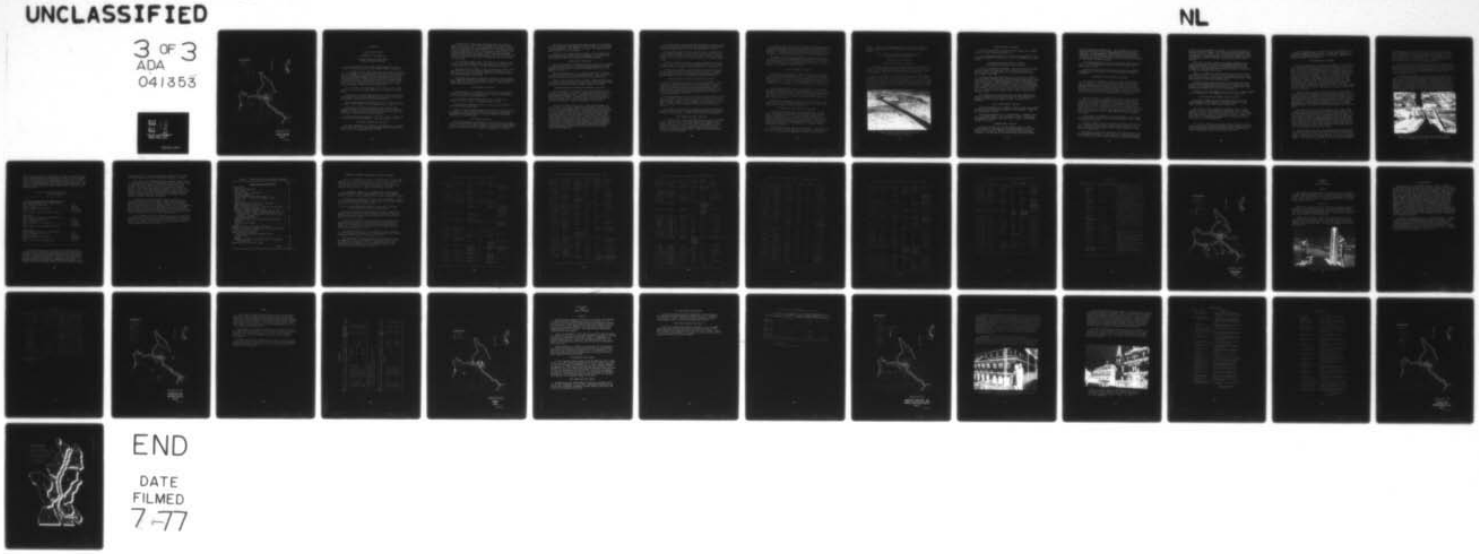

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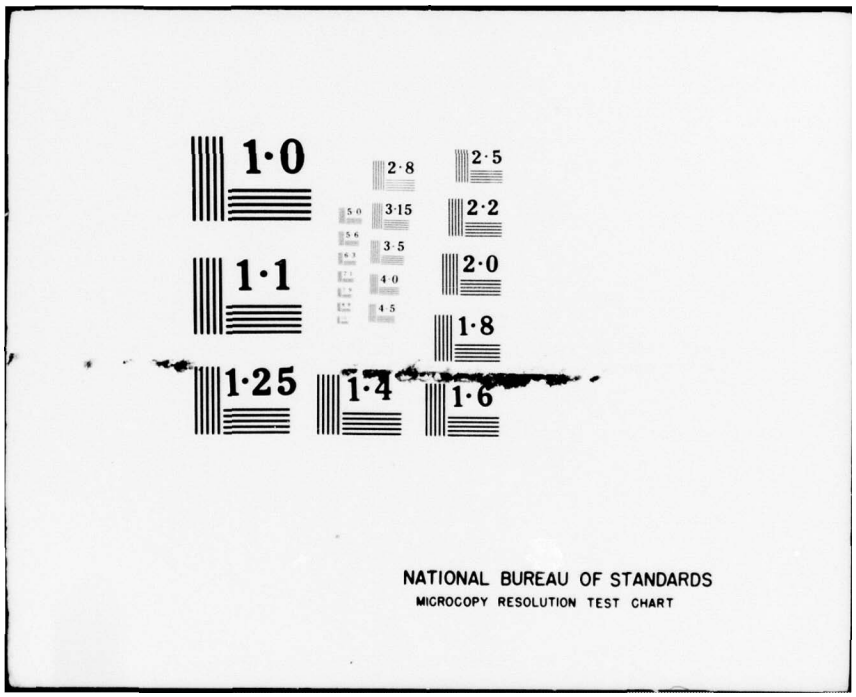
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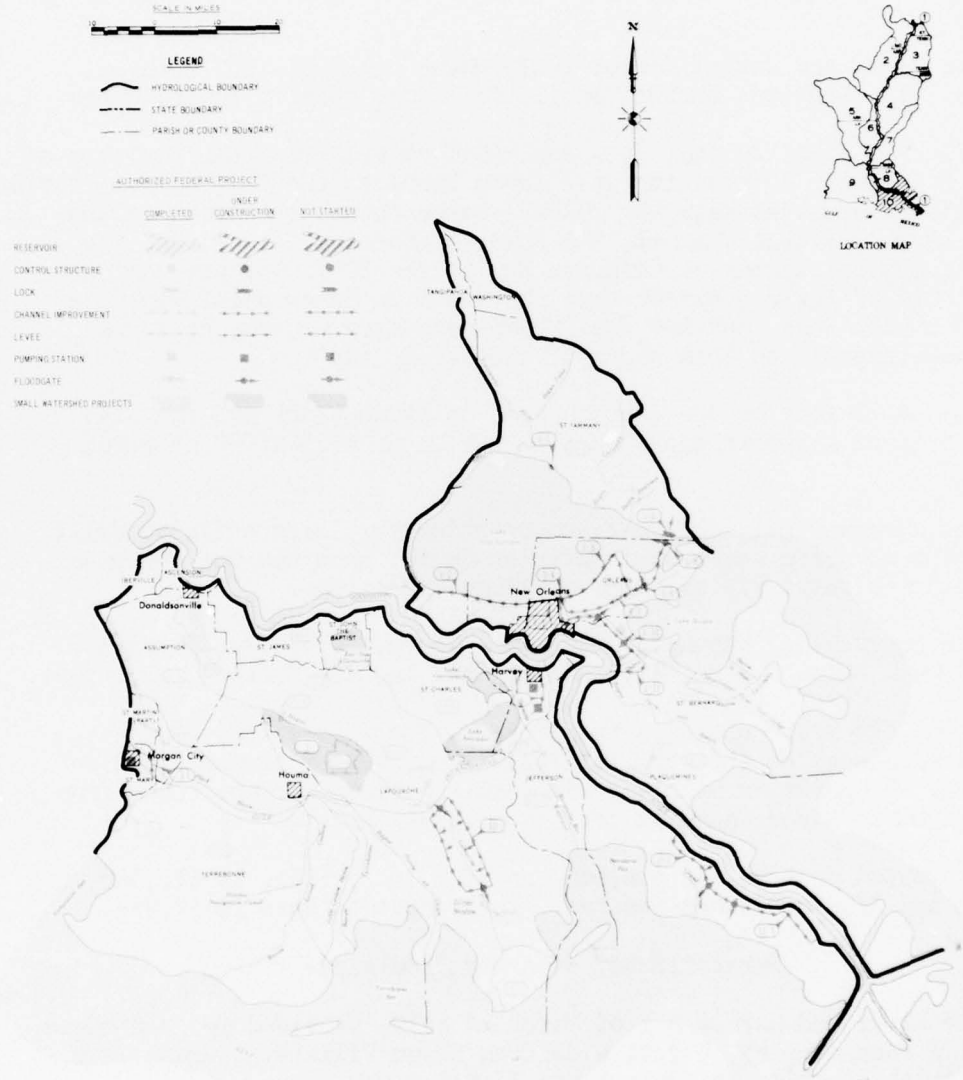


LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

FLOOD CONTROL

WRPA 10

FIGURE 55

NAVIGATION

Aquatic Plant Control

(See WRPA 8 for Description)

Atchafalaya River and Bayous Chene, Boeuf, and Black, Louisiana

The River and Harbor Act of 1968, House Document 155, 90th Congress, 1st Session, authorized the following plan of improvement:

(1) A channel 20 feet deep and 400 feet wide from the vicinity of the U. S. Highway 90 crossing over Bayou Boeuf to the Gulf of Mexico via the Gulf Intracoastal Waterway (GIWW), Bayou Chene, the Avoca Island-Cutoff Bayou Drainage Channel, the Lower Atchafalaya River, and the existing project across Atchafalaya Bay to the 20-foot depth contour in the Gulf of Mexico, except that the width in Bayou Boeuf would be reduced to not less than 300 feet where necessary because of industrial developments on both sides of the bayou, and

(2) A 20-foot by 400-foot channel in Bayou Black and the GIWW from the major shipyard on Bayou Black at U. S. Highway 90 to Bayou Chene.

The waterway will afford transportation for large offshore drilling equipment being built by industries in the area and for personnel and equipment servicing offshore drilling operations.

The controlling depths, (mean low gulf (m.l.g.)) (May 1970) are as follows: below Morgan City, Bar Channel and Bay Channel, 12.0 feet.

In an effort to expedite the project, local interests have accomplished some of the work initially required for preconstruction planning. Preparation of plans and specifications for the reach from Black Bayou to Bayou Chene is nearing completion.

Estimated cost of the project, as of July 1, 1971, is $13,540,000 Federal and $1,300,000 non-Federal. Total cost to date is $4,866.

Barataria Bay Waterway, Louisiana

The River and Harbor Act of March 2, 1919, provided for a dredged channel 5 feet deep by 50 feet wide from Bayou Villars to Grand Isle. Total length of this improvement was 37 miles.

A modification of the project was auhtorized by the River and Harbor Act of July 3, 1958. This act provides for a channel approximately 37 miles long with a 12-foot depth and 125-foot width at m.l.g. from its beginning at the GIWW to Grand Isle, La., following the route of the previous project to mile 15.5 in Bayou St. Denis; thence by a relocated channel along the western shore of Barataria Bay through Barataria Pass to the 12-foot depth contour in the Gulf of Mexico, with a 4.3 mile extension of the project to include the westerly 4.3 miles of Bayou Rigaud.

The controlling depths (m.l.g.) (May 1970) are as follows: GIWW to Gulf, 12.0 feet; (February 1970), Bar Channel, 13.0 feet; (April 1969) Barataria Pass to buoy 8, 11.0 feet to buoy 18, 12.0 feet.

Work under the Act of March 2, 1919, was completed in 1925. Work under the Act of 1958 was physically completed on November 9, 1963, with real estate activities completed April 28, 1967. Total cost of the completed project is $1,572,685.

The waterway and adjacent waters below Lafitte are used extensively by commercial fishermen and oystermen. Several special recreational events add to the value for recreational purposes. Traffic in 1970 totaled 120,618,508 ton miles.

Bayou Bonfouca, Louisiana

River and Harbor Act of January 21, 1927, provides for dredging a channel 10 feet deep at mean low water and 60 feet wide from Slidell, La., to deep water in Lake Pontchartrain.

The controlling depths (mean low water) are as follows: Bar Channel, 8.5 feet; to mile 7.0, (highway bridge) 8.0 feet.

The project was completed in 1931 at a total cost of $36,497, of which $30,997 was Federal funds.

Traffic in 1970 totalled 196,083 ton miles, most of which came from a shipyard, a creosote treatment plant, and a clamshell storage area. The waterway also provides access to Lake Pontchartrain from popular boating areas on Bayou Liberty.

Bayou Dupre, Louisiana

The River and Harbor Act of August 26, 1937, provides for a channel 6 feet by 80 feet from the highway bridge at Violet to Lake Borgne, thence 6 feet by 100 feet to the 6-foot contour in the lake and a turning basin 100 feet by 200 feet at Violet. Length of improvement is 7.3 miles.

Bayou Dupre and Lake Borgne Canal control depths, (m.l.g.) (April 1970) are as follows: Bar Channel, 5.5 feet; to mile 0.3, (Mississippi-River-Gulf Outlet), 9 feet, to mile 6.4, 6 feet. The project was completed in 1939 at a cost of $38,915.

Traffic in 1970 totaled 185,170 ton miles. The oil industry provides the major cargo on this waterway; although, it is heavily used by recreational craft moving between Violet and Lake Borgne.

Bayou Lacombe, Louisiana

The River and Harbor Act of August 30, 1935, provides for a channel via Bayou Lacombe 8 feet by 60 feet through the entrance bar in Lake Pontchartrain and removal of snags and overhanging trees to the fish hatchery at mile 8.2.

The controlling depths (m.l.g.) (December 1969) are as follows: bar channel, 7 feet; to mile 6.8 (highway bridge), 7 feet; to mile 8.2, 4 feet. The project was completed in 1938 at a cost of $4,716.

Traffic in 1970 totaled 839,190 ton miles. Although heavily used for boating, fishing, and access to Lake Pontchartrain, the major cargo on this waterway is gravel from the upper reaches of the bayou.

Bayou Lafourche and Lafourche-Jump Waterway, Louisiana

River and Harbor Act of August 30, 1935, House Document 45, 73d *Congress, 1st Session*, provides for a permanent closure of the head of Bayou Lafourche without a lock; a channel 6 feet by 60 feet from Napoleonville to Lockport; a channel 6 feet by 60 feet from Larose to the Gulf of Mexico with a jettied entrance at Belle Pass and the closure of Pass Fourchon. Length of improvement is 79.25 miles.

The River and Harbor Act of July 14, 1960, House Document 112, 86th Congress, 1st Session, authorized modification of the existing project. This modification provides for an auxiliary channel 12 feet by 125 feet from the GIWW (mile 37.2) generally parallel to and west of Bayou Lafourche along Grand Bayou Blue to Bayou Lafourche below the highway bridge at Leeville, thence in the bayou to the 12-foot depth contour in the Gulf of Mexico; a channel 9 feet by 100 feet in Bayou Lafourche from Leeville to the lower limits of Golden Meadow, restoring and extending the existing jetties at Belle Pass from the 6-foot to the 12-foot depth if found advisable to reduce maintenance; and dredging a 12-foot by 125-foot channel from Bayou Lafourche at Leeville through the Southwestern Louisiana Canal to and through Bayou Rigaud (Grand Isle).

The reach of Bayou Lafourche between Thibodaux and the head of the bayou at Donaldsonville, authorized by Act of August 30, 1935, has been deauthorized under Public Law 90-149, approved November 22, 1967.

The controlling depths, (m.l.g.) are as follows: (October 1969) bar and entrance channel, 14 feet; to mile 13.4, (Leeville bridge) 10 feet; to mile 23.9, 8 feet; to mile 27.8, 8 feet; to mile 39.1 (Larose bridge), 8 feet; to mile 58.2, 5 feet; to mile 73.4, (Thibodaux bridge) 6 feet.

The total project as modified is 21 percent complete. The total estimated (July 1, 1971) cost of the modified project is $11,461,000; of which $8,061,000 is Federal cost and $3,400,000 is non-Federal cost.

Offshore oil operations, sulphur mining, and commercial fishing are the industries which will benefit from this project. In addition, the auxiliary channel will help alleviate navigation hazards along Bayou Lafourche. Traffic in 1970 totaled 37,173,513 ton miles.

Bayous LaLoutre, St. Malo and Yscloskey, Louisiana

River and Harbor Act of August 26, 1937, modified March 2, 1945, provides for a channel 5 feet by 40 feet from deep water in Lake Borgne to the shore line at the mouth of Bayou Yscloskey; a channel 6 feet by 40 feet from deep water in Lake Borgne through Bayous St. Malo, LaLoutre, and Eloi to deep water in Lake Eloi; a channel 5 feet by 30 feet in Bayou LaLoutre between Hopedale and Bayou St. Malo. Length of improvements is 30 miles.

Controlling depths (m.l.g.) are as follows: Bayou LaLoutre, (April 1970) Bar Channel, 5 feet; to mile 15, 5 feet, to mile 21.7, 5 feet; Bayou St. Malo, (January 1970) Bar Channel, 3 feet; to mile 6.3, 3 feet; Bayou Yscloskey, (January 1970) Bar Channel, 3.5 feet; to mile 2, 4 feet. Construction was completed May 19, 1956, at a total cost of $96,916.

The channels are mainly used by commercial trappers and fishermen. Commercial launching and boat rental facilities enhance the recreational value of this waterway. Traffic in 1970 totaled 9,744 ton miles.

Bayou Segnette Waterway, Louisiana

A 9 foot by 60 foot channel was authorized by the River and Harbor Act of 3 September 1954. The channel begins at the southern end of Company Canal at Westwego and follows the existing channel of Bayou Segnette (including its cutoffs) southward to approximately mile 5.6, thence runs southerly, via new land cut lying to the east of Lake Salvador, to the Intracoastal Waterway at Bayou Villars and the head of the Barataria Bay Waterway.

The authorization for this project provides for maintenance to a 6-foot depth only until such time as, in the discretion of the Chief of Engineers, maintenance to a greater depth (not to exceed 9 feet) is justified. An interim channel 8 feet deep and 80 feet wide, including overdepth, was completed in August 1957, at a cost of $238,828.

The project, 12.2 miles long, affords a shorter and direct route for the larger and modern fishing and shrimping boats to the packing and canning industries on Bayou Segnette and Company Canal at Westwego. The estimated cost of construction for the project is $485,000. Traffic in 1970 totalled 106,643 ton miles.

Bayou Terrebonne, Louisiana

This project was authorized by the River and Harbor Act of March 4, 1913, and prior River and Harbor Acts. It provides for a channel 6 feet deep and of suitable width from Bush Canal, (mile 12.9 from mouth of Bayou), to St. Louis Cypress Company bridge at Houma. Length of improvement is 24.1 miles. The project channel, west of Barrow St. in Houma, La., was abandoned by River and Harbor Act of Sept. 8, 1959.

The controlling depths (m.l.g.) are as follows: (October 1968) from GIWW through Bourg Canal to Bayou Terrebonne, 6.0 feet; Bayou Terrebonne to Montegut Bridge, 5.0 feet; Montegut Bridge to Bush Canal, 5.0 feet; Bush Canal to Sea Breeze, 6.0 feet; (September 1962) to Lake Barre light, 3.0 feet; (April 1963) GIWW to head of navigation (N. O. Blvd.), 4.0 feet.

The project was completed in 1916 at a cost of $120,089. Operational supplies for oil drilling operations comprise the major cargo. Traffic in 1970 totaled 9,355,165 ton miles.

Chefuncte River and Bogue Falia, Louisiana

This project was authorized in 1881 and modified in 1930 and 1958. The original 8-foot project from Covington to Lake Pontchartrain was completed in 1929. The present project provides for a channel 10 feet deep at m.l.g. level by 125 feet wide from that depth in Lake Pontchartrain to mile 3.5 of Chefuncte River, thence for a channel 8 feet deep over an unspecified bottom width via Chefuncte River and Bogue Falia River to Covington, La. The total length of improvement is 14 miles.

The controlling depths (m.l.g.) are as follows: Bar channel, 8 feet; to mile 2.5, 9.5 feet; (May 1969) to mile 10.7, 12 feet, to mile 14, 3 feet. The project was completed in 1959 at a total cost of

$58,342. Traffic in 1970 totaled 48,242 ton miles. Most of this traffic was marine shells. The waterway is also used for fishing and boating.

Gulf Intracoastal Waterway Between Apalachee Bay, Florida, and the Mexican Border

(See WRPA 9 for Description)

Houma Navigation Canal, Louisiana

This channel, constructed by local interests in 1962, allows navigation from the GIWW near the western edge of Houma to the Gulf of Mexico. Channel dimensions are 15 feet deep by 150 feet wide. Length of improvement is 41.6 miles with 14.5 miles in Terrebonne Bay.

The River and Harbor Act of October 23, 1962, provides for Federal maintenance of the canal. This officially began in 1963. The controlling depths (m.l.g.) are as follows: GIWW to mile 35, 11 feet; to Dulac, 13 feet; to lighted buoys 1 and 2 in Terrebonne Bay, 12 feet; Cat Island Pass, 14 feet. Annual cost of maintenance is estimated $105,000. Traffic totaled 74,838,781 ton miles in 1970 with the oil industry contributing the major cargo.

Houma Navigation Canal at confluence with Gulf Intracoastal Waterway.

Grand Bayou Pass, Louisiana

The River and Harbor Act of June 20, 1938, provides for a channel 6 feet by 60 feet through the entrance bar.

The controlling dpeth below m.l.g. level was not maintained. The project was completed in 1939 and cost $7,676. No commerce was reported in 1970.

Intracoastal Waterway (5 Feet by 40 Feet)
Mississippi River to Bayou Teche, Louisiana

The River and Harbor Act of March 2, 1919, provides for a waterway 115 miles long, 5 feet deep and 40 feet wide at m.l.g. from the Mississippi River to Bayou Teche, La. This project has been superseded largely by the GIWW.

Controlling navigation depths below m.l.g. level are as follows: Bayou Terrebonne, (November 1969) from GIWW through Bourg Canal to Bayou Terrebonne, 5.5 feet; to Montegut Bridge, 6.5 feet; to Bush Canal, 6.5 feet; to Sea Breeze, 9 feet; through Lake Lagraisse to Terrebonne Bay, 5 feet; (September 1962) to Lake Barre Bar Light, 3 feet; (April 1963) GIWW to head of navigation (N. O. Blvd), 4 feet; Bayou Black, (August 3, 1953) GIWW (mile 83.5) to mile 0.3, 6 feet; to mile 3.4, 8 feet; to mile 3.6, 6 feet; to Sun Oil Company wharf, 4 feet; at upper limit of clusters, 5 feet.

This project has not been completed and has been superseded for most of its length by the previous 9-foot by 100-foot channel and the present 12-foot by 125-foot channel of GIWW. The total cost is $875,000.

Little Caillou Bayou, Louisiana

The River and Harbor Act of January 21, 1927 provides for a channel 5 feet by 40 feet from Bayou Terrebonne to Robinson Canal. Length of the improvement is 20 miles.

The controlling depths (m.l.g.) are as follows: (December 1969) mile 0 to Chauvin Bridge, 3 feet; to Cocodrie, 5 feet. The project was completed in 1929 at a cost of $77,761. Traffic in 1970 totaled $14,580,035 ton miles.

Michoud Canal, Louisiana

The River and Harbor Act of 1968, approved August 13, 1968, (House Document 97, 90th Congress, 2d Session) provides for the construction of a 36-foot by 250-foot ship channel along the present alignment of the GIWW from the Mississippi River-Gulf Outlet (MR-GO)

to, and including, the Michoud Canal. The enlargement of the GIWW would be to the south to prevent jeopardizing the levee along the north bank. The enlargement of the Michoud Canal would be generally centered in the existing channel, thus leaving room on each side of the channel for construction of wharves and the tieing-up and servicing of ships outside the project channel.

The controlling depths (m.l.g.) are as follows: GIWW, mile 14 to mile 5, 12 feet; Michoud Canal, (January 1970) from GIWW to upper end of canal, 14 feet.

No work, other than real estate activities, has been initiated. Estimated costs of the project are $1,879,000 Federal and $69,000 non-Federal.

Mississippi River-Gulf Outlet, Louisiana

This project was authorized by Public Law 455, approved March, 1956. It consists of a ship channel 36 feet deep and 500 feet wide extending approximately 76 miles in a land-and-water cut from the junction of the Inner Harbor Navigation Canal (IHNC) and the GIWW in New Orleans to the 38-foot contour in the Gulf. Jetties for the reduction of shoaling, a turning basin, and a lock and connecting channel with the Mississippi River are salient features of the project.

From the junction of the GIWW and the IHNC, the channel follows the GIWW to the vicinity of Highway 47 (Paris Road), from whence it proceeds in a generally southeasterly direction along the south shore of Lake Borgne through the marshes, across Chandeleur Sound between Breton and Grand Gosier Islands, and to the 38-foot contour in the Gulf of Mexico. In the open waters of the Gulf, the channel dimensions increase to 38 feet by 600 feet. (The channel affords a tidewater outlet to the gulf that is about 37 miles shorter then the Mississippi River route.

Construction of the channel was initiated in March, 1958. The portion of the channel from the IHNC to Louisiana Highway 47 (Paris Road) was completed in May 1959.

An interim channel 36 feet by 250 feet was completed from the highway to the Gulf of Mexico and the channel opened to traffic in July 1963. Enlargement of the channel to full project dimensions was completed in January, 1968.

The turning basin has been constructed at the intersection of the MR-GO channel and the IHNC. A fixed, high-level 4-lane highway bridge at Paris Road has also been constructed under a reimbursable agreement

with the Louisiana Department of Highways. The jetties have been completed to the 6-foot contour. The south dike has been extended about 5.3 miles (mile 20.2 to mile 14.9). A recent study indicates that further measures for reducing shoaling in the channel through Breton Sound are advisable. Studies of possible locations for the ship lock are underway.

The project provides a potential for harbor development large enough for dispersion of docks and cargo-handling facilities, thus allowing more flexible operation for inland and seagoing commerce. Sailing time, ship-turnaround time, navigation hazards, and congestion all tend to be reduced by the project.

Traffic on the MR-GO has increased from 342,629 tons in 1960 to 4,012,850 tons in 1970. Ton miles in 1970 totaled 221,095,171. Major types of cargo moving over the channel include crude petroleum, primary metal products, and food and kindred products.

The Board of Commissioners of the Port of New Orleans has established a bulk commodity handling facility on the channel reach, and is planning a large expenditure for the creation of a "Centroport" which would locate extensive port facilities on the channel.

The work is 22 percent complete, as of July 1, 1971. Total estimated cost is $304,483,000. Cost through July 1, 1971 is $56,682,400.

Mississippi River Outlets, Venice, Louisiana

This project, authorized by the River and Harbor Act of 1968 (House Document 361, 90th Congress, 2d Session), provides for additional navigation outlets from the Mississippi River.

These outlets will be provided by enlargement of the existing channels of Baptiste Collette Bayou and Grand-Tigre Passes. Channel dimensions will be 14 feet deep with a bottom width of 150 feet, except for entrance channels which will be 16 feet by 250 feet. Jetties to reduce the cost of maintenance dredging will be constructed to the 6-foot contour, if and when justified.

The extensive offshore oil operations, most of which are based in Venice, will realize considerable savings in transportation costs from the additional outlets from the Mississippi River. Commercial and sports fishermen and hunters will also derive benefits.

Estimated Federal cost, as of July 1, 1971, is $5,820,000 for construction, including $80,000 for the U. S. Coast Guard for aids to navigation. Estimated non-Federal cost is $1,426,000. Funds have not been made available for the project.

New Orleans Port, Louisiana

The port of New Orleans is located on both banks of the Mississippi River in the southeastern part of the State of Louisiana. The lower limit of the port is approximately 81 miles above Head of Passes. The upper limits on the left and right descending banks are 104 and 115 miles, respectively, above Head of Passes. The distance from the Head of Passes to the Gulf of Mexico is 20 miles via Southwest Pass and 13 miles via South Pass. In general, with the exception of the small community of Algiers on the opposite bank of the river, the city of New Orleans is bounded on the south by the Mississippi River. Lake Pontchartrain and the Rigolets, a connecting link between Lake Pontchartrain and Lake Borgne, are the northern boundary. The Inner Harbor Navigation (Industrial) Canal in the city of New Orleans connects the Mississippi River with Lake Pontchartrain, the MR-GO, and the GIWW east of New Orleans.

Limits of the port encompass all of the parish of Orleans and the river frontage of the parishes of Jefferson and St. Bernard. This includes the towns and communities of Kenner, Harahan, Southport, Arabi, Chalmette, Meraux, and Violet on the left bank; and Avondale, Bridge City, Westwego, Marrero, Harvey, Gretna, and Algiers on the right bank. The frontage for deepwater vessels within the port limits includes approximately 57 miles along the riverbanks, 11 miles on the Inner Harbor Navigation (Industrial) Canal, and approximately 78 miles on the MR-GO.

Other frontages, east of the Mississippi River, include: about 13 miles along Lake Borgne Canal-Bayou Dupre Waterway; 34 miles along the GIWW (Rigolets-New Orleans Cut); 3.8 miles on Michoud Canal; 5 miles on Bayou Sauvage; 14 miles on Chef Menteur Pass; 10 miles on the south bank of the Rigolets; and approximately 70 miles of waterfront on the shores of Lakes Pontchartrain and Borgne and connecting waterways. Frontages west of the Mississippi River include: 10.25 miles along Harvey Canal; 2 miles on Hero Cutoff; 2 miles on Bayou Barataria; 17 miles along Algiers Canal (Algiers Alternate Route-GIWW); and 1.25 mile on the Company Canal and Bayou Segnette.

The Mississippi River has a clear and unobstructed channel from New Orleans to Head of Passes where the river divides into three main passes: Southwest Pass, South Pass, and Pass a Loutre, two of which, Southwest and South Passes, are improved under the existing navigation project. The distances from Head of Passes to the mouths of Southwest

and South Passes are 20.1 miles and 13.5 miles, respectively. The mouth of South Pass is 18.5 miles northeast of the mouth of Southwest Pass. From the foot of Canal Street and via the Southwest Pass, the port of New Orleans is 261 nautical miles west of Mobile, Ala., and 437 nautical miles east of Galveston, Tex. Navigable depths in the Mississippi River are shown in the section for WRPA 1.

Between Head of Passes and the port limits of New Orleans are the lock entrances to two canals, providing passageways for luggers, fishing boats, and small barges; one at Ostrica on the left bank connecting with Breton Sound and the Gulf through Quarantine and California Bays, and one at Empire on the right bank connecting with Adams Bay and Empire Waterway to the Gulf.

The Inner Harbor Navigation (Industrial) Canal is owned by the State of Louisiana, and the portion between Lake Pontchartrain and the junction with the Intracoastal Waterway is operated by the Board of Commissioners of the Port of New Orleans. The portion of this canal between the Intracoastal Waterway and the Mississippi River, including the lock and two bridges, is operated by the U. S. Army Corps of Engineers. A third bridge in this reach is operated by the Louisiana State Department of Highways. The canal extends from the Mississippi

Harvey Lock connects the Gulf Intracoastal Waterway System with the Mississippi River System at the Port of New Orleans.

River at a point 2.5 miles below the foot of Canal Street, across the city to Lake Pontchartrain, a distance of 5.5 miles. A lock is located 2,000 feet from the river end and operated, toll free, on a 24-hour basis. A turning basin, 1,000 feet square by 30 feet deep, is 1.5 mile from the river and immediately south of the Florida Avenue bridge. The canal was constructed by the Board of Commissioners of the port of New Orleans in 1922.

Table 31 - Locks Within Port Area,
Port of New Orleans

Inner Harbor Navigation (Industrial) Canal Lock	
Miles below New Orleans, La. (Canal Street)	2.9
Miles from Mississippi River	0.6
Width of chamber	75 feet
Length available for full width.	640 feet
Lift	0-17.4 feet
Depth on miter sill at mean low gulf level	31.5 feet
Harvey Lock	
Miles above New Orleans, La. (Canal Street).	3.3
Miles from Mississippi River	0.13
Width of chamber	75 feet
Length available for full width.	425 feet
Lift	0-19.6 feet
Depth on miter sill at mean low gulf level	12 feet
Algiers Lock	
Miles below New Orleans, La. (Canal Street).	7.0
Miles from Mississippi River	0.38
Width of chamber	75 feet
Length available for full width.	800 feet
Lift	0-18.0 feet
Depth on sill at mean low gulf level	13 feet

Three thousand feet above the Florida Avenue bridge, the Inner Harbor Navigation (Industrial) Canal bends to the left approximately 28 degrees. Curving off to the right from this bend is the route of the GIWW coinciding with the MR-GO. The route of the Intracoastal Waterway eliminates the hazards of navigating the open water of Lake Pontchartrain during storms and the inconvenience and dangers of passing through five additional bridges on the Inner Harbor Navigation

(Industrial) Canal. The first three bridges from the river or lock end of the canal have to be passed before the turnoff is reached.

In the port area, 30 companies operate warehouses having a total of 3,012,450 square feet of dry storage space and 3,720,000 cubic feet of cooler and freezer space; all but two of the warehouses have railroad connections, and all are easily accessible to arterial highways. Four cotton compresses are operated by four of the warehouse operators. Diversified handling equipment is maintained by the operators, and special services are provided, including packing and crating, forwarding, pool car distribution, car loading, weighing, stamping, marking, fumigating, and drayage.

Two hundred and ninety-five piers, wharves, and docks are located within the port of New Orleans. Eighty-three are situated on the left bank, and 55 are on the right bank of the Mississippi River within the parishes of St. Bernard, Orleans (city of New Orleans), and Jefferson. Four are on the Lake Borgne Canal, 47 on the Inner Harbor Navigation (Industrial) Canal, three on the MRGO Seaway Canal, seven on Michoud Canal, seven on Bayou Sauvage, 67 on the Harvey Canal, 16 on the Algiers Canal, and six on the Bayou Barataria.

Table 32 summarizes the piers, wharves, and docks at the port by primary purpose for which used or type of service offered. Waterfront facilities in the port area which are used exclusively by recreational craft are not included in this report. Traffic in the port of New Orleans totaled 123,674,208 tons in 1970.

Table 32 - New Orleans Port Piers, Wharves, and Docks

Primary Purpose for Which Used	No.
Cargo handling:	
Barite and drilling mud	10
Bulk cement	5
Concrete products (prestressed)	3
Dry bulk commodities	2
Foreign automobiles and rocket stages	2
General cargo - in foreign and domestic trades	42
Grain	7
Gypsum rock	2
Liquid hydrogen and liquid oxygen (one each)	2
Lumber and bananas (one each)	2
Marine construction materials, supplies, and equipment	14
Molasses, alcohol, and chemicals	6
Oil well drilling equipment, supplies, and service	30
Petroleum products, crude oil, petrochemicals, chemicals, phosphoric acid, sodium sulfide, and soybean, fish, vegetable, and tung oils	32
Sand, gravel, and shell	15
Scrap metal, boiler slag, and fertilizer (one each)	3
Seafood	2
Steel and steel products	4
Sugar	1
Landing for passenger and vehicular ferries	6
Landing for ship service boats, crews, and passengers from vessels at anchor in harbor	2
Marine services and repairs:	
Fueling tugs and towboats and other types of small vessels	6
Mooring	45
Mooring in connection with marine repairs, conversion, and outfitting	48
Unused facilities at time of survey	4
TOTAL	295

Waterway from Empire, Louisiana, to the Gulf of Mexico

The River and Harbor Act of July 24, 1946 provides for a navigable channel 9 feet by 80 feet from Empire, La., to the Gulf of Mexico, with construction of rubble stone jetties to the 6-foot depth contour; extension of jetties to the 9-foot depth contour is provided, if and when it becomes necessary. Length of improvement is 10 miles.

The controlling depths (m.l.g.) (January 1970) are as follows: Empire Lock Forebay, 8 feet; through Doullut Canal, 7 feet; Doullut Canal to jetties, 9 feet; through jetties, 16 feet; Bar Channel, 11 feet.

The project was completed in 1950 at a cost of $1,068,142. Traffic in 1970 totaled 1,445,552 ton miles. Major cargoes were seafood, shells, and offshore-oil-operation-related traffic.

Waterway from the Intracoastal Waterway to Bayou Dulac, Louisiana (Bayous Grand Caillou and Lecarpe, Louisiana)

The River and Harbor Act approved August 30, 1935, provides for a channel 5 feet by 40 feet from the Intracoastal Waterway at Houma via Bayou LeCarpe, Bayou Pelton, and Bayou Grand Caillou to Bayou Dulac, a distance of about 16.3 miles.

The River and Harbor Act approved October 23, 1962 authorized a modification of the project for the waterway from the Intracoastal Waterway to Bayou Dulac, La., (Bayous Grand Caillou and LeCarpe) to provide for a 10-foot by 45-foot channel in Bayou LeCarpe from the GIWW to the Houma Navigation Canal.

The controlling depths (m.l.g.) (November 1969) are as follows: from GIWW through Bayou LeCarpe, 8 feet; through Bayou Pelton, 4 feet; through Bayou Grand Caillou to Dulac bridge, 5 feet.

Work authorized by the River and Harbor Act of August 30, 1935 was completed in 1938. Work authorized by the modification of River and Harbor Act of October 23, 1962 was completed August 17, 1964. Total Federal cost including cost for modification was $129,622. Traffic in 1970 totaled 5,559,473 ton miles.

Table 33 - List of Mississippi River Terminals, Docks, Mooring Locations, and Warehouses in WRPA 10

AHP Mile	Location	Owner or Operator	Type of Service	Shelter or Warehousing	Cargo Handling Equipment	Remarks
173.6R	1 mile east of Donaldsonville, La.	First Nitrogen Corp.	Anhydrous ammonia loading	None	Single hose handling equipment	No RR connections to dock. Facilities designed for loading liquid ammonia in barges
173. 4R	Aben, La.	Triad Chemical	Load ammonia and bulk urea	None	Conveyor and pipeline	TP RR
170.0R	Burnside, La.	Burnside Boat Service Co.	Tug, barge mooring, tow make-up	None	None	No RR connections
165.8R	Lauderdale, La.	Shell Oil Co., Inc.	Crude oil	None	None	No RR connections
159.3R	Vic. St. Amelia, La.	Shell Pipe Line Corp.	Pipeline terminal barge unloading	Crude oil tanks	None	No RR connections
128.8R	Vic. Taft, La.	Hooker Chemical Corp. Natl. Phosphate Div.	Liquid & bulk loading & unloading	Storage warehouse approx 2,000' from river	Buhler unloader (solid) Chickspan unloader (liquid)	T&P RR
127.8R	Taft, La.	Union Carbide Corp.	Petro-chemicals; liquid handling for barges & tanker ships	No cargo shelter	Pipelines & unloading pumps for filling & discharging liquid chemicals	T&P RR to plant site but not to waterfront. 1 tanker/barge dock & 1 barge dock; water pumping station with 2 dolphins which support intake line marked "No mooring."
126.9L	Norco, La.	Shell Chemical Co.	Dock facilities for barge loading or unloading via pipelines	None	None	ICRR. RR facilities avail. to plant site but not to immediate dock area
126.0L	Norco, La.	Shell Oil Co., Inc.	Loading/unloading petroleum products	None	None	IC & KCS RRs.
125.4L	Good Hope, La.	General American Trans. Corp.	Liquid storage oil & chemicals & vegetable oils	Barrel house drumming & canning	Bulk liquid cargo	ICRR. Various tanks of different sizes for lease in storing petroleum products, chemicals & vegetable oils
125.1R	Hahnville, La.	American Marine Corp.				
120.6L	Destrehan, La.	ADNAC, Inc. - operating as the St. Charles Grain Elevator Co.	Grain handling	2,270,000 bushels capacity grain	Gravity spouts	ICRR
120.1L	Destrehan, La.	Bunge Corp.	Export grain elevator	Grain warehouse	Vessel loading	ICRR
120.0R	Luling, La.	Monsanto Chemical Co.	Barge loading & unloading	None	Conveyor for bulk loading	No RR connections
118.4L	St. Rose, La.	Cities Serv. Oil Co. Leased to American Liberty Tank Terminals	Terminal	5 warehouses		ICRR
117.8R	Ama, La.	Farmers Export Co.	Grain elevator	5,000,000-bu. silos	2 barge unloading marine legs; 3 ship loading buhlers; 2 belt conveyors	T&P RR. RR not to dock
115.0L	Vic. Kenner, La.	Humble Pipe Line Co.	Barge unloading, jet fuel for pipeline transportation to Moisant airport	None	Hose hoist & connections (barges furnish pumping equipment)	No RR connections. 14'x 32' steel pile-supported concrete dock & pre-cast concrete walkway
114.6R	Fortier, La.	American Cyanimid Co.	Liquid ammonia barge loading station	6'x6'	None	No RR connections
112.9R	Avondale, La.	Avondale Shipyards, Inc.	Outfitting docks with shore services	None	Whirley gantry cranes (2); 50-ton capacity each	T&P RR
112.2R	Avondale, La.	Avondale Shipyards, Inc.	Outfitting docks with shore services	None	Whirley gantry cranes (2); 50-ton capacity each	T&P RR
112.0R	Avondale, La.	Avondale Shipyards, Inc.	Outfitting docks with shore services	None	Whirley gantry cranes (2); 60-ton capacity	T&P RR

Table 33 - List of Mississippi River Terminals, Docks, Mooring Locations, and Warehouses in WRPA 10 (continued)

AHP Mile	Location	Owner or Operator	Type of Service	Shelter or Warehousing	Cargo Handling Equipment	Remarks
108.4R	Avondale, La.	The Permian Corp.	Crude oil barge loading or unloading	None	Liquid handling dock	No RR connections
109.9R	Westwego, La.	Avondale Shipyards, Inc.	Outfitting docks with shore services	Warehouse 544'x124'	35-ton railroad crane	T&P RR
108.2R	Avondale, La.	American Liberty Oil Co.	Vegetable oils, animal fats, storage	None	Flexible hoses & pipelines	TP-MP RR
108.2L	Point Landing, La. (Avondale)	Humble Oil & Ref. Co.	Petroleum products	None	None	No RR connections
106.0L	New Orleans, La.	W. P. Villere Co.	Barge slip	None	None	No RR connections. 60'-wide, 300'-long
105.0R	Vic. Westwego, La.	Koch-Willis Marine Contractors	Marine contractors	None	None	No RR connections
104.5R	Vic. Westwego, La.	Barge & ship service	Barge cleaning & repairing; hydraulic sand; barge fleeting	None	Pumps only	No RR connections
104.0L	New Orleans, La.	Bertucci Bros. Constr. Co.	Contractor	6 ac. open storage	Riprap	No RR connections
103.7L	New Orleans, La.	International Lubricant Corp.	Lube oil barge unloading only	10'x10' room, office	Hose winches only	No RR connections
103.5L	Carrollton Ave., New Orleans, La.	Federal Barge Lines, Inc.	Barge fleeting	None	None	No RR connections
103.0R	New Orleans, La.	Bd. of Comm., Port of New Orleans	General cargo	None	None	No RR connections
102.4R	Westwego, La.	Sinclair Oil Corp.	Unloading of light oil barges	None	None	TPMPT
102.3R	Vic. Westwego, La.	Sinclair Ref. Co., Inc.	Petroleum	None	6" oil hoses	TP-MP RR
102.2R	Vic. Westwego, La.	Avers Materials Co., Inc.	Materials handling	None	Draglines	TP RR
102.1L	New Orleans, La.	U. S. Industrial Chemicals Co.	Bulk molasses & liquids	None	None	No RR connections at dock. ICRR in plant
101.9R	Vic. Westwego, La.	Texas-Pacific-Missouri Pacific Terminal	Railroad	None	None	Terminal
101.5R	Vic. Westwego, La.	Natl. Gypsum Co.	Loading & unloading	None	Gantry crane 2-1/2 yd. bucket	No RR connections. Used to unload gypsum ore boats
101.5L	New Orleans, La.	N. O. Coal & Bisso Towboat Co.	Towing, barge rental, marine salvage, all kinds. Lifting capacity 300 tons	None	Derricks	N. O. Public Belt RR
101.3R	Vic. Westwego, La.	Gulf States Asphalt Co., Inc. of La.	Asphalt manufacturers	Metal warehouse	8" pipeline	TP-MP RR
101.0R	Vic. Westwego, La.	U. S. Industrial Chemicals Co.	Bulk molasses	None	None	NonRR connections at dock. TP-MP RR in plant
100.5R	Vic. Amesville, La.	The Celotex Corp.	Dock & mooring clusters	None	None	No RR connections
100.4R	Vic. Amesville, La.	Miss. Valley Barge Line	Fleeting	None	None	No RR connections
100.4L	Nashville Ave. Wharf	Bd. of Comm. Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
100.3R	Vic. Amesville, La.	Johns-Manville Products Corp.	Roofing	None	None	No RR connections
99.8L	Public Grain Elevator	Bd. of Comm., Port of New Orleans	Grain	Silos	Conveyors	N. O. Public Belt RR
99.5R	Marrero,, La.	Hess Oil & Chemical Corp.	Terminalling of bulk liquids	None	Pump hose & cargo lines to move bulk liquids to & from vessels	SP & TP-MP RRs. Terminal located at Mile 99.5 is connected to terminal at Mile 99.2 via pipelines

Table 33 - List of Mississippi River Terminals, Docks, Mooring Locations, and Warehouses in WRPA 10 (continued)

AHP Mile	Location	Owner or Operator	Type of Service	Shelter or Warehousing	Cargo Handling Equipment	Remarks
99.4R	Vic. Marrero, La.	Clark Oil Ref. Corp.	Terminalling & storage	Storage tanks	None	TP-MP RR. Liquid storage only
99.2R	Marrero, La.	Hess Oil & Chemical Corp.	Terminalling of bulk liquids	90 steel storage tanks	Pump hose & cargo lines to move bulk liquids to & from vessels	SP & TP-MP RRs.
99.2L	Public Commodity Warehouse Wharf	Bd. of Comm., Port of New Orleans, La.	General cargo	Warehouse	None	N. O. Public Belt RR
99.0L	Napoleon Ave. Wharf	Bd. of Comm., Port of New Orleans, La.	General cargo	Warehouse	None	N. O. Public Belt RR
99.0R	Vic. Marrero, La.	Texaco, Inc.	Bulk petroleum storage & bunkering	None	None	TP-MP RR in terminal. Does not extend to dock
98.6R	Vic. Marrero, La.	Penick & Ford, Ltd.	Manufacture of molasses	None	None	SP-TP RR
98.4L	New Orleans, La.	Stuyvesant Docks, ICRR	Freight	Covered wharves	Barge unloading, bulk commodities, Wharf 7; bulk meal loading facilities, Wharf 8; hopper, bulk sugar, Wharf 10	ICRR
98.2R	Vic. Harvey, La.	Swift & Company	Barge loading & unloading	None	Bulk loading (fertilizer) 4" PVC pipe, 8" rubber-lined steel line for acid unloading	No RR connections
97.2R	Vic. Gretna, La.	Gulf Oil Corp.	Fueling tug boats & barges	None	Crane	No RR connections
97.8L	Harmony St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
97.6L	Seventh St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
97.4L	Washington Ave. Wharf	Bd. of Comm., Port of New Orleans	General Cargo	Warehouse	None	N. O. Public Belt RR
97.3L	Third St. Wharf	Bd. of Comm., Port of New Orleans	General Cargo	Warehouse	None	N. O. Public Belt RR
97.2L	First St. Wharf	Bd. of Comm., Port of New Orleans	General Cargo	Warehouse	None	N. O. Public Belt RR
96.8L	St. Andrew St. Wharf	Bd. of Comm., Port of New Orleans	General Cargo	Warehouse	None	N. O. Public Belt RR
96.6R	Vic. Gretna, La.	Sou. Pacific Lines	Open wharf	None	None	SP RR
96.5R	Vic. Gretna, La.	John W. Stone Oil Distrib., Inc.	Mid-stream fueling oprns.	1 partially closed warehouse, approx. 3,000 sq.ft. 1 warehouse, approx. 800 sq.ft. 1 office bldg., approx. 1,000 sq.ft.	1 2-ton gib crane	SP RR, approx. 1,000 ft. from dock facility
96.5L	Celeste St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
96.3L	Market St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
96.2R	Vic. Gretna, La.	Ralph's Fleet, Inc.	Private fleeting serv.	None	None	No RR connections
96.1L	Orange St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
95.9L	Robin St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
95.9R	Perry St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	TP-MP RR
95.6L	Thalia St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
95.4L	Erato St. Wharf	Bd. of Comm., Port of New Orleans	Banana cargo	Shelter	Conveyors	ICRR

Table 33 - List of Mississippi River Terminals, Docks, Mooring Locations, and Warehouses in WRPA 10 (continued)

AHP Mile	Location	Owner or Operator	Type of Service	Shelter or Warehousing	Cargo Handling Equipment	Remarks
95.3L	Julia St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
95.0L	Poydras St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
94.9R	Vic. Algiers, La.	Coyle Lines, Inc.	Water transportation	None	None	No RR connections
94.8L	Canal St. Wharf	Bd. of Comm., Port of New Orleans	Open plaza	None	None	No RR connections
94.7R	Vic. Algiers, La.	Algiers Iron Wks. & Dry Docks Co., Inc.	Drydocking and marine repairs	Wharf & fab. shop	None	MP location 1 block away
94.6L	Bienville St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
94.3L	Toulouse St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
94.3R	Vic. Algiers, La.	Todd Shipyard Corp.	Ship repairs	None	None	No RR connections
94.0L	Gov. Nicholls St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
93.9L	Esplanade Ave. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
93.8L	Mandeville St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
93.7L	Press St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
93.4R	Louisa St. Wharf	Bd. of Comm., Port of New Orleans	General cargo & heavy lifts	Warehouse	None	N. O. Public Belt RR
93.4R	Vic. Algiers, La.	Shell Oil Co.	Tie-up point for ship-bunkering equipment	Small office	None	No RR connections. Boiler located immediate ly behind dock - used for steaming bunker fuels
93.3R	Vic. Algiers, La.	T. Smith & Son, Inc.	Derrick & barge fleet	None	None	No RR connections
93.3L	Piety St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
93.1L	Desire St. Wharf	Bd. of Comm., Port of New Orleans	Banana cargo	Shelter	Conveyors	N. O. Public Belt RR
93.1L	Congress St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
93.1R	Vic. Algiers, La.	Crescent Towing & Salvage Co.	Tug fleet	None	None	No RR connections
93.0L	Pauline St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	None	N. O. Public Belt RR
92.9L	Poland St. Wharf	Bd. of Comm., Port of New Orleans	General cargo	Warehouse	Derricks, tugs, etc.	N. O. Public Belt RR. US Army Terminal
92.7L	New Orleans, La.	N. O. Army Terminal	Freight & passenger terminal	Shelter avail.	Yes	N. O. Public Belt RR
92.1R	Vic. Algiers, La.	Todd Shipyard Corp.	Ship repairs	None	None	No RR connections
92.0L	New Orleans, La.	Dixie Machine & Metal Works, Inc.	Repair wharf	None	None	No RR connections
91.9L	Charbonnet St. Wharf	Bd. of Comm., Port of New Orleans	Cotton dock	Warehouse	None	No RR connections. Used for repair dock only
91.6L	St. Maurice Ave. Wharf	Bd. of Comm., Port of New Orleans	Storing - foreign cars	Open	None	No RR connections. Used for repair dock
91.3R	Vic. Algiers, La.	US Quarantine Station Dept. Health	Small boat	None	None	No RR connections. Wharf space for mooring two launches
90. 9R	Vic. Algiers, La.	Star Towing Co.	Tugboat base; barge fleeting	None	None	No RR connections

Table 33 - List of Mississippi River Terminals, Docks, Mooring Locations, and Warehouses in WRPA 10 (continued)

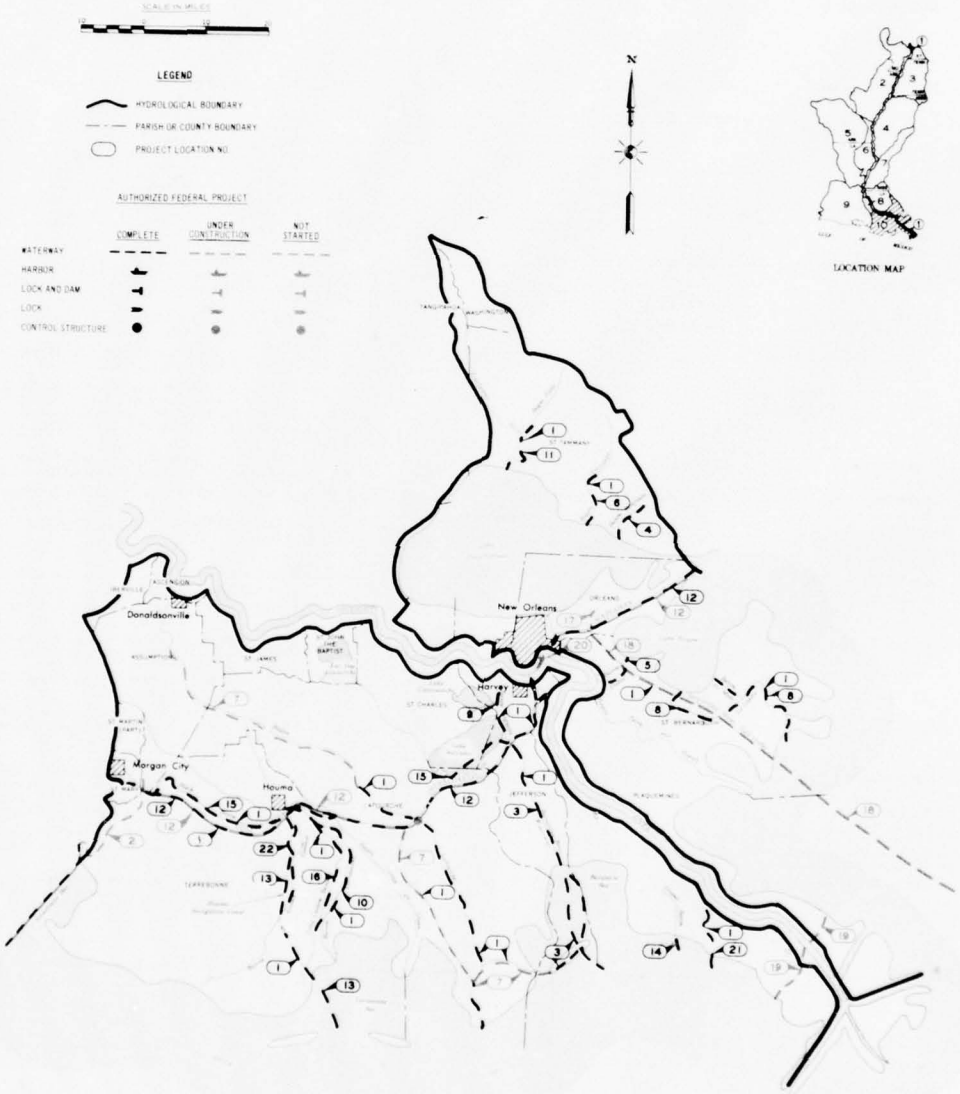
AHP Mile	Location	Owner or Operator	Type of Service	Shelter or Warehousing	Cargo Handling Equipment	Remarks
90.8L	New Orleans, La.	American Sugar Co.	Sugar refining	1,000' dock with shelter; 100' extension not sheltered	2 Colby cranes 6-yd. bucket	Southern RR
88.6L	Vic. Chalmette, La.	Tenneco Oil Co.	1 tanker wharf; 3 barge wharves	None	None	No RR connections. Handles crude oil in & refined products out at Tenneco Oil Co.'s Chalmette refinery
88.5R	Chalmette, La.	Humble Oil & Ref. Co.	Petroleum products	None	None	No RR connections
86.9L	Vic. Meraux, La.	Murphy Oil Corp.	Petroleum products	None	None other than bulk petroleum products	No RR connections to dock, La.-Sou. services refinery
79.2R	Vic. Braithwaite, La.	La.Sou. RR Co.	None	None	None	N. O. Terminal Co.
76.0R	Vic. Belle Chasse, La.	Red Star Yeast & Prod. Co.	Molasses loading & unloading	Total tank storage capacity, 2,800,000 gal.	Equipped for liquid cargo only	N. O.&Lower Coast RR
75.0R	Belle Chasse, La.	Avers Materials Co., Inc.	Material handling	None	Draglines	No RR connections
72.8R	Belle Chasse, La.	Jayred Oil & Gas Co.	Oil loading	None	1 60-HP pump	No RR connections
72.6R	Oak Point, La.	Chevron Chemical Co. Oronite Division	Shipping & receipt of oil & chemical products	Small shed for personnel	Swiveling mast hoist for cargo hose handling	N.O. & Lower Coast RR. No direct access to terminal wharf. Not equipped to handle dry bulk or pkgd. material
55.3	Davant, La.	Electro-Coal Transfer Corp.	Material handling	40'x80' shop area	River barge unloader & ocean barge unloader	No RR connections
51.2L	Vic. Davant, La.	Texas Pipe Line Co.	Load crude oil	Wash house, oil storage house, cottage	Crude oil loading equipment	No RR connections
63.0	Alliance, La.	Gulf Oil Co.-U.S.	Prime fuels, LPG, & chemicals	None	Hoses	No RR connections
62.5	Alliance, La.	Gulf Oil Co.-U.S.	Coke	None	Conveyor	No RR connections
62.0	Alliance, La.	Gulf Oil Co.-U.S.	Construction	None	None	No RR connections
49.2L	Vic. Pointe-a-la-Hache, La.	Perry R. Bass, Inc.	Oil loading	None	Hose crane	No RR connections
49.0R	West Pointe- a-la-Hache, La.	Jefferson Lake Sulphur Co.	Barge loading & water intake	None	None	No RR connections
41.3R	Vic. Potash, La.	Humble Oil & Ref. Co.	Oil loading dock	None	None	No RR connections
40.4L	Vic. Nestor, La.	Humble Oil & Ref. Co.	Oil loading dock	None	None	No RR connections
40.4R	Potash, La.	Humble Oil & Ref. Co.	Oil loading dock	None	None	No RR connections
39.0R	Port Sulphur, La.	Freeport Sulphur Co.	Sulphur loading dock	No warehousing. 1250' ship dock; 950' barge dock; shelter avail. when not otherwise reserved for oprns.	4 liquid loading towers; 1 traveling solid ship-loading crane (operative); 1 fixed solid ship-loading tower (inoperative)	N.O. & Lower Coast RR
38.8R	Home Place, La.	John W. Mecom	Oil barge loading	None	None	No RR connections
35.5R	Vic. Nairn, La.	Perry R. Bass, Inc.	Personnel only	Small personnel shelter	Hose crane	No RR connections
35.1L	Vic. Daisy, La.	Perry R. Bass, Inc.	Personnel & oil loading	Personnel shelter	None	No RR connections
27.5R	Vic. Sunrise, La.	Cal-Ky Pipe Line Co.	Dock	None	None	No RR connections
27.2L	Vic. Ostrica, La.	Cal-Ky Pipe Line Co.	Dock (tanker)	None	Crude oil loading hoses	No RR connections
27.0L	Vic. Ostrica, La.	Cal-Ky Pipe Line Co.	Dock (barge)	None	Crude oil loading hoses	No RR connections

Table 33 - List of Mississippi River Terminals, Docks, Mooring Locations, and Warehouses in WRPA 10 (continued)

AHP Mile	Location	Owner or Operator	Type of Service	Shelter or Warehousing	Cargo Handling Equipment	Remarks
25.5R	Vic. Buras, La.	Peoples Utilities, Inc.	Walkway & pump station	None	None	No RR connections
25.1R	Vic. Buras, La.	Esso std. Oil Co.	Marine products	-	-	No RR connections
16.8R	Boothville, La.	Chevron Oil Co.	Dock	None	None	No RR connections
16.5L	Vic. Olga, La.	The California Co.	Personnel dock	None	None	No RR connections
16.4L	Vic. Olga, La.	Chevron Oil Co.	Dock	None	None	No RR connections
16.0R	Vic. Boothville, La.	Gulf Offshore Serv. Corp.	-	-	-	-
11.9R	Vic. Venice, La.	Getty Oil Company	Oil terminal	None	Oil loading	No RR connections
11.6R	Vic. Venice, La.	Tidewater Oil Co.	Crude oil & LPG loading	None	None	No RR connections
10.9R	Vic. Venice, La.	Texaco, Inc.	Oil production	None	Derrick	No RR connections. 1 small stiff-leg derrick capable of handling small eqpt. only
10.8R	Vic. Venice, La.	Mrs. John M. Friedman	Mooring dock	None	None	No RR connections
2.3L	Vic. Pilottown, La.	The Texas Pipe Line Co.	Load & unload crude oil	Combination warehouse, workship and generator building	Crude oil loading facilities & mooring & docking installations for tankers & barges	No RR connections
4.7L	Southwest Pass, La.	Chevron Oil Co.	Dock	None	None	No RR connections
4.8L	Southwest Pass, La.	Chevron Oil Co.	Dock	None	None	No RR connections
4.8L	Vic. Burrwood, La.	The California Co.	Personnel dock	Shelter	None	No RR connections
4.8R	Vic. Burrwood, La.	The California Co.	Personnel dock	Housing for 10 men	None	No RR connections
7.2L	Vic. Burrwood, La.	Shell Oil Co.	Oil barge loading dock	Personnel only	Oil tanker	No RR connections
8.6L	Vic. Burrwood, La.	Shell Oil Co.	Mooring dock	None	None	No RR connections
8.9L	Vic. Burrwood, La.	The California Co.	Personnel dock	Housing for 4 to 10 men & company radio	None	No RR connections
8.9L	Vic. Burrwood, La.	Chevron Oil Co.	Dock	None	None	No RR connections
9.0L	Vic. Burrwood, La.	Chevron Oil Co.	Dock	None	None	No RR connections
9.0R	Vic. Burrwood, La.	The California Co.	Personnel dock	Housing for 10 men	None	No RR connections
11.4L	Vic. Port Eads, La.	Shell Oil Co.	Mooring for crew boats & servicing gas facilities	Shelter for personnel only	None	No RR connections
12.7L	Southwest Pass, La.	Chevron Oil Co.	Dock	None	None	No RR connections

PROJECT MAP INDEX
Navigation and Harbors - WRPA 10

Map Location No.	Name of Project	Agency	Year Complete	Project Uses	Description
1.	Aquatic Plant Control	C of E, NOD	Continuing	N,FC,F&W R	Removal of obnoxious aquatic plant growths in navigable streams & related waters. Tot. est. annual cost for entire state of Louisiana, $5,500,000.
2.	Atchafalaya River & Bayous Chene, Boeuf, & Black, La.	C of E, NOD	Not started	N	Chan. 20 ft.x400 ft. in US Highway 90 crossing over Bayou Boeuf to Gulf of Mexico via GIWW, Bayou Chene, etc. 20 ft.x400 ft. chan. in Black Bayou. Est. cost (1 Jul 71) $13,840,000 Fed. & $1,300,000 non-Fed.
3.	Barataria Bay Waterway, La.	C of E, NOD	1963	N, R	Chan. 5 ft.x50 ft.x37 mi. in Bayou Villars to Grand Isle under 1919 Act. Chan. 12 ft.x125 ft.x37 mi. in GIWW to Grand Isle. Cost $1,572,685. 1970 traffic 120,618,508 ton miles.
4.	Bayou Bonfouca, La.	C of E, NOD	1931	N, R	Chan. 10 ft.x60 ft.x 9.3 mi. in Slidell, La. to Lake Pontchartrain. Tot. cost $36,497; $30,997 Fed. 1970 traffic 196,083 ton miles.
5.	Bayou Dupre, La.	C of E, NOD	1939	N, R	Chan. 6 ft.x80 ft. in Violet to Lake Borgne, 6 ft.x100 ft. to 6 ft. contour in lake. Turning basin 100 ft.x200 ft. Length 7.3 mi. Cost $38,915. 1970 traffic 185,170 ton miles.
6.	Bayou Lacombe, La.	C of E, NOD	1938	N,R,F&W	Chan. 8 ft.x60 ft.x 8.2 mi. beginning at Lake Pontchartrain. Cost $4,716. 1970 traffic 839,190 ton miles.
7.	Bayou Lafourche & Lafourche-Jump Waterway, La.	C of E, NOD	21%	N	Orig. authority, Closure of head of Bayou Lafourche, chan. 6 ft.x60 ft.x 79.25 mi. in Napoleonville to Lockport & 6 ft.x60 ft. in Larose to Gulf of Mexico. Modified authority, chan. 12 ft.x125 ft. in GIWW to Gulf of Mexico, chan. 9 ft.x100 ft. in Bayou Lafourche in Leeville to Golden Meadow. Tot. proj. 21% complete. Est. cost $11,461,000; $8,061,000 Fed. 1970 traffic 37,173,513 ton miles.
8.	Bayous Laloutre, St. Malo, & Ysclosky, La.	C of E, NOD	1956	N,R,F&W	Chan. 5 ft.x40 ft. in Lake Borgne to Bayou Ysclosky; chan. 6 ft.x40 ft. in Lake Borgne to Lake Eloi; chan. 5 ft.x30 ft. in Bayou Laloutre in Hopedale to Bayou St.Malo. Tot. length 30 mi. Tot. cost $96,916. 1970 traffic 106,043 ton miles.
9.	Bayou Segnette Waterway, La.	C of E, NOD	1957	N	Chan. 8 ft.x80 ft.x12.2 mi. in Westwego to GIWW at Bayou Villars & head of Barataria Bay Waterway. 9 ft. depth auth. when justified. Cost $238,828. Est. cost to 9 ft. depth, $485,000. 1970 traffic 106,643 ton miles.
10.	Bayou Terrebonne, La.	C of E, NOD	1916	N	Chan. 6 ft. deep of suitable width, 24.1 mi. long in Bush Canal to Houma. Cost $120,089. 1970 traffic 9,555,165 ton miles.
11.	Chefuncte River & Bogue Falia, La.	C of E, NOD	1959	N,R,F&W	Chan. 10 ft.x125 ft.x14 mi. in Lake Pontchartrain to Covington, La. Cost $58,342. 1970 traffic 48,242 ton miles.
12.	Gulf Intracoastal Waterway between Apalachee Bay, Fla. & the Mexican Border	C of E, NOD	61%	N	Within La., a waterway 384.1 mi. long in Lake Borgne Light No. 29 near mouth of Rigolets to Sabine R., an alternate route in Morgan City to Port Allen, La. Also incls. Harvey, Vermilion & Calcasieu locks. Cost through Jun 30, 1971, $62,688,163. 1970 traffic 1,011,763,341 ton miles.
13.	Houma Navigation Canal, La.	C of E, NOD	1962	N	Chan. 15 ft.x150 ft.x41.6 mi. in GIWW to Gulf of Mexico. Federal maint. est. $105,000 annually. 1970 traffic 45,688,015 ton miles.
14.	Grand Bayou Pass, La.	C of E, NOD	1939	N	Chan. through entrance bar 6 ft.x60 ft. Cost $7,676. No commerce in 1970.
15.	Intracoastal Waterway (5' x 40') Miss. R. to Bayou Teche, La.	C of E, NOD	Not completed (superseded)	N	Waterway 5 ft.x40 ft.x115 mi. in Miss. R. to Bayou Teche, La. Cost through Jun 30, 1971
16.	Little Caillou Bayou, La.	C of E, NOD	1929	N	Chan. 5 ft.x40 ft.x20 mi. Cost $77,761.
17.	Michoud Canal, La.	C of E, NOD	Not started	N	Ship chan. 36 ft.x250 ft. along present GIWW in Miss. R.-Gulf Outlet to industrial Michoud Canal. Est costs, 1 Jul 71, $1,879,000 Fed. & $69,000 non-Fed.
18.	Mississippi River-Gulf Outlet, La.	C of E, NOD	22% complete 1971	N	Ship chan. 36 ft.x500 ft. extending approx. 76 mi. in land & water cut in junc. IHNC & GIWW to 38 ft. contour in gulf. Incls. jetties, turning basin, lock & connecting chan. w/Miss. R. Est.cost is $237,483,000 Fed. & $67,000,000 non-Fed. Cost through Jun 30, 1971 is $56,682,400. 1970 traffic 31,131,903 ton miles.
19.	Mississippi River Outlets, Venice, La.	C of E, NOD	Not started	N	Enlargement of existing channels, Baptiste Collete Bayou & Grand-Tigre Passes to 14 ft.2150 ft. except entrance dimensions will be 16 ft.x250 ft. Jetties when justified. Est. cost (1 Jul 71) $6,460,000 Fed. & $1,426,000 non-Fed.
20	New Orleans Port, La.	C of E, NOD	Continuing	N	Chan. 35 ft.x1500 ft. w/portion 40 ft.x500 ft. (See WRPA-1.) Frontage for deep water vessels 57 mi. on river banks, 11 mi. on Industrial Canal & 78 mi. on Miss.R.-Gulf Outlet. Facilities incl. 3 locks, 75 ft.x640 ft.,425 ft. & 800 ft. & 295 piers, wharves & docks. 123,674,208 tons in 1970.
21.	Waterway from Empire, La. to Gulf of Mexico	C of E, NOD	1950	N	Chan. 9 ft.x80 ft.x10 mi. fm Empire, La. to Gulf of Mexico,& jetties Cost $1,068,142. 1970 traffic 1,445,552 ton miles.
22.	Waterway from Intracoastal Waterway to Bayou Dulac, La.	C of E, NOD	1964	N	Chan. 5 ft.x240 ft.x16.3 mi. fm GIWW at Houma to Bayou Dulac. Modified to provide chan. 10 ft.x45 ft. in Bayou LeCarpe fm GIWW to Houma Navigation Canal. Cost $129,622. 1970 traffic 3,559,473 ton miles.



LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

NAVIGATION

WRPA 10

FIGURE 56

RECREATION
AND
FISH AND WILDLIFE

General

Water Resource Planning Area 10 is also known as the New Orleans area and includes the Chefuncta area and the area east of the Atchafalaya Floodway. The area land types are coastal marsh, uplands, and bottom lands. Water resources as well as human population density are highest in the region in this area.

Recreation

WRPA 10 has 11,530 acres of land available for outdoor recreation, including 130 acres Federally owned, 1,101 acres State owned lands, 6,915 acres of parish and quasipublic lands, and 2,711 acres of municipal, local government and school board lands. Additionally, there are 673 acres of lands in private ownerships.

Suitable for recreation in WRPA 10 are 938,946 acres of slack water and about 329 miles of stream. Developed recreation facilities include six acres for camping, 81 acres for picnicking, 790 acres for playing outdoor sports and games, 174 acres for swimming, and 40 acres for boat ramps.

The beach at Grand Isle, Louisiana.

Fish and Wildlife

Water-related fish and wildlife resources in WRPA 10 include 219,000 acres of lakes between two and 40 acres in size, 939,000 acres of lakes over 40 acres in size, 329 miles of fishable streams, 1,315,000 acres of forest land, and 1,566,000 acres of wetland. Ponds under two acres in size have not been inventoried and are of minor consequence in areas with such great large-water resources. Included in the lake acreage figures is Lake Pontchartrain as well as other large coastal lakes. WRPA 10 water-related fish and wildlife facilities include State ownership of eight wildlife management areas, two parks, one refuge, and one warmwater hatchery. Seven percent of the wildlife management area acreage lies outside the hydrologic boundaries of WRPA 10. Federally owned facilities include two wildlife refuges. Numerous private hunting and fishing facilities exist but have not been inventoried. All areas are capable of supplying wildlife-oriented recreation. Fish-and-wildlife-oriented recreation consists of nature study and photography, but primarily bird watching. Such use is nonconsumptive within certain limits.

Freshwater fishing demand totaled 5,178,000 angler-days. Stream fishing habitat is currently present in quantities capable of satisfying only 15 percent of the stream fishing demand. The demand for waterfowl hunting totaled 172,000 hunter-days. Wetland habitat is extremely abundant and can easily satisfy all hunter demand. Demand for wildlife-oriented recreation totaled 669,000 user-days. All demand figures are for area residents in the year 1970.

PROJECT MAP INDEX
Recreation, Fish, and Wildlife Facilities - WRPA 10

Map Location No.	Name of Project	Agency	Project Use	Description 1/
12.	Biloxi Public Shooting Area	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 39,728 ac. Excellent waterfowl hunting &bream fishing.
14.	Bohemia Wildlife Mgmt. Area	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 33,000 ac. Waterfowl hunting & fishing.
7.	Bonnet Carre Public Shooting Area	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 5,798 acres. Waterfowl hunting & fishing. Easily accessible to New Orleans residents.
16.	Delta Natl. Wildlife Refuge	U. S. Fish & Wildlife Service	F&W	High F&W rating. 48,788 acres. High value waterfowl refuge. Excellent fishing.
1.	Fairview Riverside State Park	La. State Parks & Recreation Comm.	R, F&W	100 acres. Fishing. High WOR use. Rec. facs. incl. camping, picnicking, and boating.
2.	Fountainbleau State Park	La. State Parks & Recreation Comm.	R, F&W	2,605 acres. High WOR use. No fishing or hunting. Rec. facs. incl. camping (group cabins, tent-trailer), picnicking, swimming, & nature trails.
15.	Gulf Islands Natl. Wildlife Refuge (Breton & Chandeleur Islands)	U. S. Fish & Wildlife Service	F&W	High F&W rating. 4,507-acre bird refuge. No inshore fishing.
8.	Lac Des Allemands		F&W	High F&W rating. 14,700 acres. Excellent fishing, waterfowl use.
9.	Lake Cataouatche		R, F&W	High F&W rating. 9,280 acres. Excellent fishing, waterfowl use.
4.	Lacombe State Fish Hatchery	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. Warmwater fish hatchery.
6.	Lake Pontchartrain		R, F&W	High F&W rating. 398,000 acres. High fishing & waterfowl use. Contributes to saltwater fishery. Easy access to New Orleans residents.
11.	Lake Salvador		R, F&W	High F&W rating. 44,800 acres. High fish & waterfowl use.
17.	Pass-a-Loutre Waterfowl Management Area	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 65,000 acres. Excellent waterfowl hunting, fishing.
5.	Pearl River Wildlife Management Area	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 16,732 acres. Recent purchase. Excellent fishing and waterfowl hunting.
13.	Pointe-au-Chien Wildlife Management Area	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 27,504 acres. Excellent waterfowl hunting & fishing.
10.	Salvador Wildlife Management Area	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 28,469 acres. Excellent waterfowl hunting & fishing.
3.	St. Tammany State Game Preserve	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 1,600 acres. Game preserve. High WOR usage.
18.	Wisner Public Shooting Area	La. Wild Life & Fisheries Comm.	F&W	High F&W rating. 30,000 acres. High waterfowl hunting use. Insignificant fishing use.

1/ WOR = Wildlife oriented recreation
F&W = Fish and wildlife
F&W* = Supplies only nonconsumptive fish and wildlife oriented recreation

LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

RECREATION AND FISH AND WILDLIFE

WRPA 10

FIGURE 57

POWER

At the end of calendar year 1970 there were eight steam plants operated by private or public utilities in the area, with installed capacity of 2,969.1 megawatts, which generated 15,213,146,000 kilowatt-hours (net) of electric energy. Five of these plants use once-through cooling with rivers or canals as the source of cooling water. The three plants using cooling towers draw their make-up water from a city water system or from company wells.

Three plants in the area have taken steps to increase their capacity since 1970 and a new plant is being constructed in three stages to eventually have installed capacity in excess of 2,000.0 megawatts, over half of which will be included in the third stage, a nuclear installation.

Several small internal combustion plants supply a portion of area energy needs. There is a good network of transmission and distribution systems of utilities in the area. Industrial generating plants total in excess of 400.0 megawatts.

PROJECT MAP INDEX
Power Plants - WRPA 10

Map Location No.	Name of Plant	Owner of Plant	Type of Plant	Type of Water Supply	River	Installed Capacity (31 Dec 70) (MW)	Annual 1970 Production	Remarks
			Existing					
1.	A. B. Paterson	New Orleans Public Service	S	Navigation Canal		218.3 1/	768,212.0	
2.	Michoud	New Orleans Public Service	S	Gulf Outlet		959.3	5,449,030.0	
3.	Market Street	New Orleans Public Service	S		Mississippi	96.3	258,283.0	
4.	Powerhouse No. 2	New Orleans Sewer & Water Bd.	S	New Orleans City Water		47.0 2/	93,517.0	
5.	Little Gypsy	La. Power & Light Co.	S		Mississippi	1,250.8	6,563,836.0	
6.	Nine Mile Point	La. Power & Light Co.	S		Mississippi	351.3	1,898,010.0	
7.	Houma	City of Houma, La.	S	Houma City Water		12.7 3/	71,891.0	
8.	Morgan City	City of Morgan City, La.	S	Wells		33.4 4/	110,367.0	

1/ Plant has 16.0-MW gas turbine auxiliary unit.

2/ Plant has 20.2-MW gas turbine auxiliary unit.

3/ Plant has 12.0-MW gas turbine and 18.0-MW internal combustion auxiliary units.

4/ Plant has 9.7-MW internal combustion auxiliary unit.

Map Location No.	Name of Plant	Owner of Plant	Type of Plant	Type of Water Supply	River	Installed Capacity (MW)	Date	
			Planned Additions					
6.	Nine Mile Point No.4	La. Power & Light Co.	S		Mississippi	783.0		1971
6.	Nine Mile Point No.5	La. Power & Light Co.	S		Mississippi	750.0	June	1973
7.	Houma	City of Houma, La.	S	Houma City Water		26.0	February	1972
8.	Morgan City	City of Morgan City, La.	S	Wells		38.0		1974
9.	Waterford No. 1	La. Power & Light Co.	S		Mississippi	430.0	May	1974
9.	Waterford No. 2	La. Power & Light Co.	S		Mississippi	430.0	January	1975
9.	Waterford No. 3	La. Power & Light Co.	N		Mississippi	1,165.0		1977

LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

POWER

WRPA 10

FIGURE 58

WATER SUPPLY
AND
SEWAGE TREATMENT

General

Water Resources Planning Area 10 covers all or part of 14 parishes in southern Louisiana. Because data herein is available only on a parish-wide basis, hydrologic boundaries have been adjusted to conform to parish lines. Eleven parishes fall within these boundaries and are considered in municipal, industrial, and agricultural water use and sewage treatment data collection. These parishes have been further subdivided into four subareas.

In 1970, within WRPA 10, 2228.8 MGD was required to meet the municipal, industrial, and agricultural water withdrawal requirements. Of this, 97 percent was supplied by surfacewater sources. Surfacewater withdrawals accounted for 96.5 percent of the municipal water used, 97.1 percent of the industrial water used, and 56.6 percent of the agricultural water used.

Sewage treatment was provided in 62.8 percent of the communities and serviced 87.6 percent of the population which utilized the area's municipal water distribution systems in 1970. The remaining 12.4 percent of the municipally serviced population utilized septic tanks or their sewage was disposed untreated.

1970 Municipal Water Supply

In 1970, municipal water systems within the WRPA serviced 37 communities, which had a combined population of 1,095,733 people, and varied in size from 200 people at Riverwood, La., to almost 593,000 people in New Orleans, La. The average daily municipal water withdrawal within the WRPA was 184.7 MGD. During June, the peak municipal water use month in 1970, the average daily use was 209 MGD. This water was supplied 96.8 percent from surfacewater sources. The average daily withdrawals resulted in a 169 GPCD use in areas serviced by central water systems. This compares with a national average of 166 GPCD.

1970 Industrial Water Supply

Industrial activity within WRPA 10 during 1970 required a daily average water withdrawal of 2038.5 MGD. Surfacewater supplied 97 percent of this withdrawal, groundwater sources supplied one percent and brackish water supplied two percent.

1970 Agricultural Water Supply

In addition to the municipal and industrial water withdrawals, agricultural withdrawals required 5.3 MGD for use in the irrigation of 1,634 acres in 1970. Of the water used, 43 percent is supplied from groundwater and 57 percent from surfacewater sources.

1970 Sewage Treatment Facilities

Primary and secondary treatment was provided in 22 of the communities that utilized a municipal water distribution system in 1970. These treatment facilities provided service for 960,270 people. There were, however, four communities with populations over 1,000 that did not provide any centralized sewage treatment.

PROJECT MAP INDEX

Municipal, Industrial, and Agricultural Water Supply and Sewage Treatment Facilities - WRPA 10

Subarea / County	Population	Municipal Water Use 1/				Industrial Water Use 1/				Agricultural Water Use 1/			Sewage Treatment Facilities					
		No. systems	Withdrawal (MGD)			Withdrawal (MGD)				Withdrawal (MGD)			Secondary Treatment		Primary Treatment		No Treatment 3/	
			Ground	Surface	Total	Ground	Sur-face	Brack-ish	Total	Ground	Surface	Total	Number Plants	Population Serviced	Number Plants	Population Serviced	Number Communities	Population
10-1						20.4	824.0	6.8	851.2	.2	.3	.5						
Jefferson	297,061	5		35.8	35.8								9	271,509				
Orleans	533,093	2	2/	116.4	116.4										1	593,471	1	24,875
St.Bernard	42,020	1		5.6	5.6													
St.Tammany	26,012	7	5.7		5.7													
10-2							6.9		6.9	.4	.5	.9	3	25,553				
Plaquemines	24,700	7		3.5	3.5													
10-3						.3	51.2	5.0	56.5	1.7	2.2	3.9					2	7,135
Assumption	13,751	1		.5	.5													
Lafourche	53,212	3		4.9	4.9								1	1,008				
Terrebonne	72,528	1		6.3	6.3								2	16,920				
10-4						5.7	1099.4	19.1	1124.2				1	30,922				
St. Charles	27,844	2		3.3	3.3													
St. James	14,222	4	.1	1.1	1.2								2	8,028				
St. John	19,232	4		1.5	1.5								2	6,478				
													1	6,381			1	5,953
Total	1,123,675	37	5.8	178.9	184.7	26.4	1981.5	30.9	2038.8	2.3	3.0	5.3	21	366,799	1	593,471	4	37,963

1/ All figures are daily averages.

2/ Less than .05 MGD.

3/ Only denotes communities of 1,000 or greater population.

LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

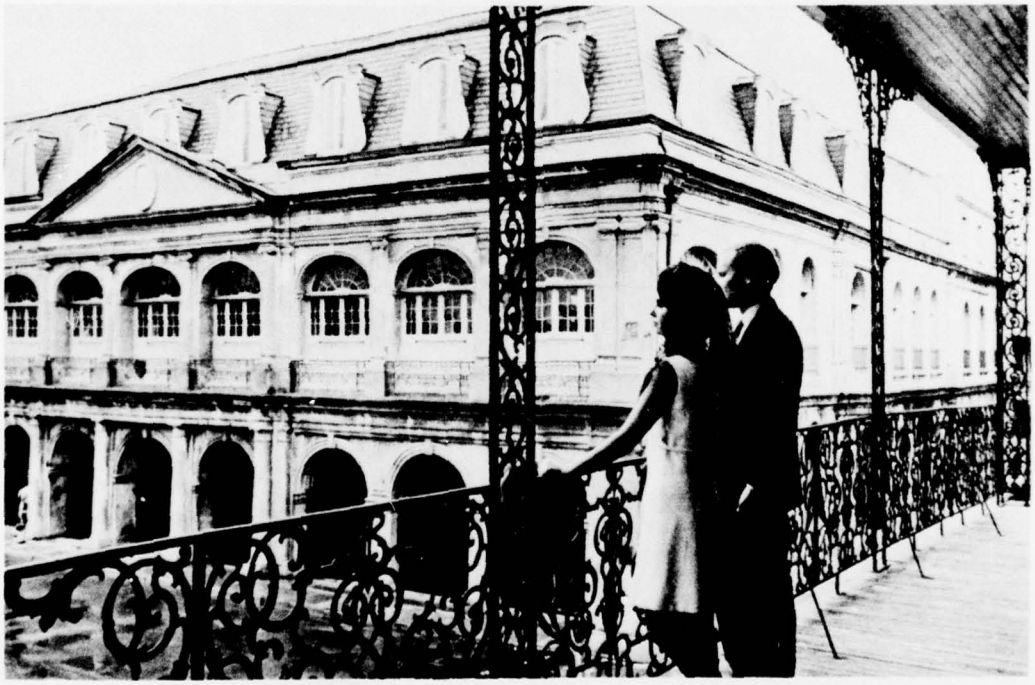
MUNICIPAL, INDUSTRIAL, AND AGRICULTURAL WATER SUPPLY

WRPA 10

FIGURE 59

The section of the Gulf Intercoastal Highway in this area is relatively high, fertile ground because of natural levees, and was ideal for agriculture in prehistoric times. Woodland and Mississippian Period man thrived there. Around the shores of Lake Pontchartrain and up the rivers can be found huge shell piles (middens), evidence of thousands of years of shellfish subsistence by prehistoric Indians. Even the salty, marshy land along the coast reveals much evidence of human occupation over several thousand years. Like other areas in the basin, far too little is known of these former occupants and their means of adaptation to this different and, in some respects, hostile environment. Much further study is needed here.

Archeological sites identified in this WRPA total 242: 33 Mississippian, 74 woodland, 2 archaic, and 133 unknown. Figure 60 shows the number of sites occupied during each period by parish. Since some of the sites have been occupied during more than one period, the number of sites shown on the figure do not agree with those above.



The Presbytere, 713 Chartres Street, New Orleans, in the heart of the Vieux Carre' district.

The visible historic evidence appears to be largely centered around early French occupancy of the area. The city of New Orleans is replete with French and Spanish architecture, much of which has been preserved under State, National, and even private ownership. A number of early European fort sites are still in evidence, as well as battlegrounds of the War of 1812. From the standpoint of historic preservation, this WRPA probably offers the greatest challenge, as well as the greatest opportunity, for relating the period of early European colonization and the national struggles for possession of this new land.

Like all of the Louisiana coastland, the area is difficult to see from the road, and the seacoast is, for the most part, not as scenic as other areas along the Gulf. The Mississippi Delta has an unusual charm in the swamplands, live oaks draped with spanish moss, hidden bayous and waterways.

Cabildo, on Jackson Square in New Orleans Vieux Carre' historic district. Erected in 1795 to house the Spanish Legislative and Administrative Council. At right, St. Louis Cathedral.

PROJECT MAP INDEX
Historic Sites - WRPA 10

Map No.	Name		Description
3	Bank of Louisiana Orleans Parish, Louisiana	NR	Located at 334 Royal Street, New Orleans. Constructed in 1827. Operated until 1868. Used as State Capitol for a year. Brick construction--two story.
4	Big Oak-Little Oak Islands Orleans Parish, Louisiana	NR	Indian architectural sites. Geological and ecological delta sites. Located in northeast New Orleans. Big Oak is on east side of Rogers Bayou. Little Oak is 1.6 miles east of Big Oak Island.
5	Cabildo, The Orleans Parish, Louisiana	NR	Constructed in 1795 to house the Spanish legislative and administrative council of the province. Located on Jackson Square.
6	Cable, George Washington, House Orleans Parish, Louisiana	NR	Author's home built in 1874 at 1313 Eighth Street.
28	Chalmette National Historical Park St. Bernard Parish, Louisiana	NR-NP	Site of famous Battle of New Orleans, January 8, 1815. Located 6 miles south of New Orleans on east bank of Mississippi River.
29	Destrehan Plantation St. Charles Parish, Louisiana	NR	Located on River Road (Louisiana 48) in Destrehan. One of the oldest houses in the State. Former indigo-producing plantation which converted to sugar crop later.
33	Fort de la Boulye Site Plaquemines Parish, Louisiana	NR	First French outpost in Louisiana. Established in 1700 1 mile north of Phoenix.
35	Fort Jackson Plaquemines Parish, Louisiana	NR	Pentagonal brick fort built in 1792 on the west bank of the Mississippi River, 2 1/2 miles southeast of Triumph.
2	Fort McComb Site Orleans Parish, Louisiana		Early European fort built and manned in 1818. Located 10 miles northeast of New Orleans on Highway 90.
1	Fort Pike Site Orleans Parish, Louisiana	NR	Early Europeans' fort located on Highway 90. Built 1818.
32	Fort St. Leon St. Bernard Parish, Louisiana		French earthworks fort built in 1754. On east bank of Mississippi River southeast of New Orleans.
34	Fort St. Philip Plaquemines Parish, Louisiana	NR	Built by Spanish governor in 1795 on east bank of Mississippi River across from Fort Jackson.
7	French Market-Old Meat Market Orleans Parish, Louisiana	NR	Located at 800 Decatur Street, New Orleans. Originally established in 1808, the present structure was built in 1813.
8	French Market-Old Vegetable Market Orleans Parish, Louisiana	NR	Located at 1100 Decatur Street, New Orleans. Constructed in 1882 on a triangular site.
9	Garden District Orleans Parish, Louisiana	NR	Bounded by Carondelet, Josephine, Magazine, and Louisiana Streets, a fashionable residential area.
10	Girod, Nicholas, House Orleans Parish, Louisiana	NR	Unusual architectural home of Mayor Girod. Built in 1797. Located at 500 Chartres Street.
11	Hermann-Grima House Orleans Parish, Louisiana	NR	Early American building style house, located at 818 St. Louis Street.
30	Homeplace Plantation House St. Charles Parish, Louisiana	NR	Two-story raised cottage located south of Hahnville on Louisiana 18.

(NR--This site is on the National Register of Historic Places)
(NP--National Park)

PROJECT MAP INDEX
Historic Sites - WRPA 10
(Continued)

Map No.	Name		Description
12	Jackson Square (Place d'Armes) Orleans Parish, Louisiana	NR	Site where U.S. Flag was raised for first time on December 20, 1803, over the newly purchased Louisiana Territory.
13	Lafayette Cemetery No. 1 Orleans Parish, Louisiana	NR	Located at 1400 Washington Avenue, New Orleans. Originally designed by one of Napoleon's engineers. Surrounded by high brick wall.
14	Lafitte's Blacksmith Shop Orleans Parish, Louisiana	NR	Used by Pirate Lafitte's blacksmiths. Located in French Quarter at 941 Bourbon Street.
15	Lower Garden District Orleans Parish, Louisiana	NR	Encompasses the residential area of Coliseum Square and the shopping area of Magazine Street in New Orleans. Architecture represents affluent 1850's and 60's.
16	Madame John's Legacy Orleans Parish, Louisiana	NR	Original house was rebuilt after a fire in 1788. "Brick between post" architecture. Located at 632 Dumaine Street.
31	Madewood Assumption Parish, Louisiana	NR	Located east of Napoleonville on Louisiana 308. Built in 1840-48, reflects plantation-day prosperity. Contains 25 rooms with 15- to 25-foot-high ceilings.
17	Merieult House Orleans Parish, Louisiana	NR	Located at 533 Royal Street, New Orleans. Creole townhouse built in 1792. Brick structure, two story with service wings.
19	Old U.S. Mint, New Orleans Orleans Parish, Louisiana	NR	Located at 420 Esplanade Avenue, New Orleans. Large three-story brick building with plaster-stuccoed exterior. Occupies site of Fort St. Charles erected by Spanish in 1792.
18	Old Ursuline Convent Orleans Parish, Louisiana	NR	Originally built by Ursuline Nuns in 1727. Significant as a Louis XV public building. Located at 1114 Chartres Street.
20	Perseverance Hall Orleans Parish, Louisiana	NR	Located at 901 St. Claude Avenue, New Orleans. Oldest Masonic Temple in Louisiana. Built in 1820, has had no modifications.
21	Pitot House (Ducayet House) Orleans Parish, Louisiana	NR	Small country residence at 1440 Moss Street. Built in late 18th century.
22	Presbytere, The Orleans Parish, Louisiana	NR	Built between 1795 and 1813. Rectory for St. Louis Cathedral. Rented to city for courthouse. Located at 713 Chartres Street.
23	St. Alphonsus Church (R.C.) Orleans Parish, Louisiana	NR	Located at 2029 Constance Street, New Orleans. One of three large churches built by the priests of the congregation of the Most Holy Redeemer. Built in 1855.
24	St. Charles Line (Street Car) Orleans Parish, Louisiana	NR	St. Charles and Carrollton Avenues route. Originally in 1833, a horsedrawn street car line. Electrified in 1893. Line covers 134 miles. New Orleans.
25	St. Mary's Assumption Church Orleans Parish, Louisiana	NR	Historic Catholic church located at 2030 Constance Street. Example of German baroque architecture.
26	Turpin-Kofler-Buja House Orleans Parish, Louisiana	NR	Greek Revival three-story brick dwelling with two-story service wing. Built in 1854. Located at 2319 Magazine Street, New Orleans.
27	Vieux Carre Historic Ditrict Orleans Parish, Louisiana	NR	Historic 85 blocks is nucleus of original city of New Orleans. Bounded by Mississippi River, Rampart Street, Canal Street, and Esplanade Avenue.

(NR--This site is on the National Register of Historic Places)
(NP--National Park)

LOWER MISSISSIPPI REGION
COMPREHENSIVE STUDY

HISTORIC AND ARCHEOLOGICAL SITES

WRPA 10

FIGURE 60

WATER RESOURCES PLANNING AREAS